

MOTOR AGE

Vol. VII No. 12

CHICAGO, MARCH 23, 1905

Ten Cents



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BEEN OVER WATCHIN' THE FOOTRACE
BETWEEN THE "YELLOW PERIL" &
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FELLOW MIGHT AS WELL LOOK FOR
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GLINCHER TIRES AS TO EXPECT
TO LICK THOSE JAPS

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MOTOR AGE

VOL. VII. No. 12

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\$2.00 Per Year

MOTOR CAR RAMBLING IN IRELAND

AN IRISHMAN'S STORY



SO FAR AS roadside troubles and accidents are concerned my touring experiences in Ireland are so very barren that I shall have to rely mainly on accidents of a different nature to interest. I have never had an accident. I have never had a collision of any sort. I have only once been compelled to desert my car through a breakage, and my bag has only consisted of one baby chicken and a dog which committed deliberate suicide. A sorry record, truly, but I may as well make a clean breast of it.

My first car was a 3½-horsepower de Dion, but, beyond the normal ignition stoppages, due to "crass ignorance," as a candid friend expressed it, I never had any trouble to record, nor experiences of an unusual nature. My next car was a 6-horsepower Daimler, and I drove this for a whole season with no trouble more serious than a twenty minutes' stop to bend the governor hammer. It was on this car that I carried out my first extended tour, during which an oft-recurring nightmare, that took the form of running away backwards downhill, almost became a reality. I was climbing that gloriously beautiful pass between Killarney and Kenmare, and just beyond Mulgrave Barracks, where the road is cut out of the mountain side and overhangs the island-studded upper lake, I missed changing gear on a grade of about one in eight. Fortunately the sprag held, or I might not have lived to tell the tale. A backward run down such a pass would be like falling out of a balloon; you can only enjoy the sensation once.

On this tour I was accompanied by an expert friend. Our cars were the first to penetrate the wilds of Kerry, and were gazed at in

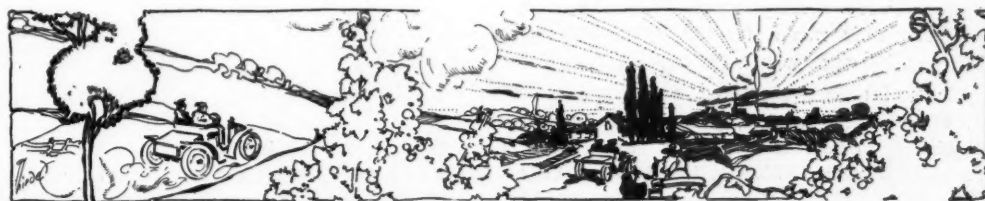
astonishment by the simple peasantry. Not so simple as they looked, as my friend found to his cost. He was descending a long hill, and observing an old dame staring at the strange equipage with open mouth—a way they have in the west—drew up, and thinking to pull the good lady's leg, asked her, "Did you see a pair of horses galloping by, ma'am?" Quick and ready came the answer, "No, sir; it's asses drives them yokes."

Another friend of mine got a worse take down in the same locality. During a stoppage he was pestered by a beggar woman, but would not respond. At length he turned on her and remarked testily, "I'm not such a fool as I look, ma'am;" "Then your honor," was the reply, "you should fall on your knees morning, noon and night, and thank the Almighty that you are not!"

The incident recalls another which, however, happened in Sackville street, Dublin. A Dublin motorist, who is short and even stouter than I am, was talking to a friend, when a woman who was vending matches kept pressing her wares on him with such importunity that he lost his temper, and, turning on her, threatened to give her in charge of the police. With one withering look she hurled this terrible imprecation at him: "May you grow fatter, and fatter, and fatter!"

The first tour of the Irish Automobile Club

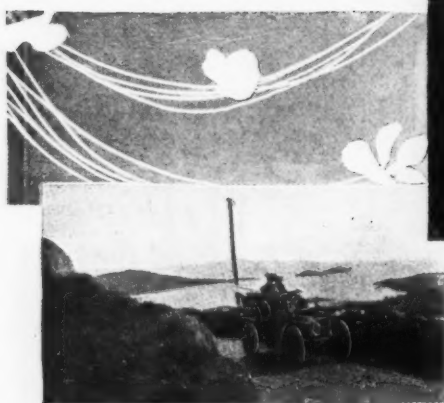
EDITOR'S NOTE—This article is comprised of excerpts from a paper recently read by R. J. McCreedy before the Automobile Club of Great Britain and Ireland.



in 1902 was rich in incidents. Within the first twenty miles a dog was immolated, and the motorist following the slayer's car was just in time to see a policeman pouring a jug of water over the corpse in the rain hope of reviving it. Another dog incident, for which I can vouch personally, happened in Rathcormac, County Cork. An Irish terrier and a greyhound were playing in the street when my car appeared, and the terrier, in characteristic fashion, made a bee line for the intruder. The greyhound went off like a streak in pursuit, and leaping on the terrier succeeded in hurling it out of the way. I do not expect you to swallow this story all at once, but I can assure you I had a credible witness to the occurrence in the then editor of the Irish Daily Express, who occupied a front seat on the car, and, of course, what the editor of a daily paper writes or says must be taken as gospel. I warned him, however, that if he told the story he could not expect to be believed, and that night in Cork he admitted that I was right. He did not venture on detailing it in his paper.

A very similar incident happened to me some years later near the town of Littleton. A greyhound ran in front of the car and kept rushing from side to side in momentary danger of being immolated, when suddenly a big collie bounded past from the rear, leaped on the greyhound, caught it by the back of the neck and dragged it to one side. As the car shot by the collie was shouldering his friend into the ditch.

In the motor-car itself it has always seemed to me that there is an almost human intelligence emphasized by a vein of humor which sometimes brings about interesting, if embarrassing, situations. For example, I have two very intimate friends who often tour with me and are very fond of motoring. A could afford a car, but is a skeptic as regards their reli-



ability. B would like to have a car, but cannot afford one without giving up his yacht, and is exceptionally skilful in a mechanical way. Now A, whom I regard as my mascot, has traveled 3,000 or 4,000 miles on my cars without a breakdown, or even a stoppage, except on one or two occasions to repair punctures. It would seem as if the car was doing its level best to make a convert.

As we all know, however, stoppages must occasionally occur of a more or less serious nature. Well, would you believe it, my cars have crowded nearly all their failures into the 1,000 miles odd during which B—whom I look on as my Jonah—has accompanied me, knowing full well that he is mechanical, and that discouragement could have no result, seeing that he can't afford to purchase. When I invite him for a trip I know that any failures which are due will inevitably occur while he is on board, and I start prepared.

On one occasion I took my Jonah on board to join a Whitsuntide tour of the Irish Automobile Club to Rostrevor. All went well until Newry was reached, when, just as it began to rain, a tire collapsed. On removing the cover both it and the air tube were found to be in very bad condition, and it took an hour and a half's hard work to get it to hold air. It went again after four or five miles, and realizing that it was absolutely worn out we continued on the rim to Rostrevor.

Next morning there were engine troubles to be attended to, and while I was seeing to this department Jonah and another passenger started to manufacture a tire out of rope and felt, and made a very successful job of it indeed. The rope was twisted together to fit the rim, and spliced in a most workmanlike manner. It was then covered with felt, and was put on to the rim with the cover in position, but the air tube removed. So good a fit was it that to the eye it was impossible to tell that the tire was not a properly inflated pneumatic. It ran well, too, except that at one spot there was a distinct bump where the join in the rope came.

On this improvised tire we started for the eighty miles' run home to Dublin. The car, however, was on its mettle and determined to get rid of Jonah before the trip was over. This it accomplished most successfully between Ardee and Collon. We were climbing a steep hill when I heard a peculiar noise, which quickly developed, and, dismounting, found that the cylinders were coming away from the base chamber. This was a trouble which bits of string and copper wire were powerless to put right; and so we chartered a donkey, and, aided by willing pushes, got the car into a neighboring demesne, where it was safely housed in a barn. This was the first and only

occasion in which I have been actually stranded on a touring expedition.

On the Clare tour, already alluded to, happened many amusing incidents. We traversed districts where no car had ever penetrated before, and created terror, amusement and astonishment. At one place I was seriously mistaken for "Anti-Christ." In the dusk I came round a corner suddenly on a cart containing four men. The horse apparently had no doubts as to my identity, but the four occupants of the cart, who were standing up, dropped at the sight of the baleful apparition. I weathered the obstacle, however, and proceeded to my destination about a mile distant. It was afterwards that I heard the sequel. It appears that the men had jumped out of the cart; some of them knelt on the road and prayed. The others, who perhaps realized that their case was hopeless, filled the air with profanity. Then the police appeared on the scene, and were about to arrest the quartet for being drunk, when it was explained to them that Anti-Christ had gone by in a fiery chariot, and that the end of the world was at hand. Another native whom I met in a narrow road after dark ran for his life to a neighboring residence, and, terror-stricken, informed the proprietor that he had seen an awful sight on the road. It was ayther the divil, or the West Clare broke loose. He could not tell which. The West Clare is the local title for the railway which meanders from Ennis to Kilkee.

During the course of the tour, while stopping at Lahinch—a popular golf center—I heard from a resident a really good story with a distinct Irish flavor. Before the golf links were discovered and the hotel built, Lahinch was one of the wildest spots in the west. On the erection of the hotel, a local fisherman—a rough, weatherbeaten soul, but with the commercial instinct well developed—thought he would earn an honest penny by running salt-water baths as an adjunct to his cottage. He did a roaring trade at first amongst the visitors stopping at the hotel, until one day a maiden lady of uncertain age patronized his establishment. Having disrobed, she pulled the cord controlling the shower-bath, and awaited developments.

They were both unexpected and startling. A



gruff voice came from overhead—"If you move a little more to the west, ma'am, you'll get the full benefit of the shower," and looking up she saw a rough, bearded face, peering down at her through the hole in the roof, through which the water was wont to flow. The lady fled

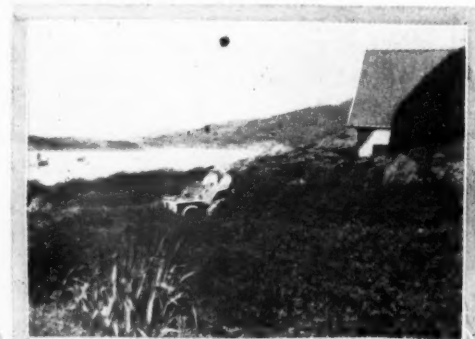
in confusion, not waiting for the shower.

It appears that the shower bath that had proved so popular consisted of a big tub of salt water which the proprietor skilfully poured through the hole when the cord was pulled. His commercial instinct was too fully developed; if he had not been afraid of wasting some of the precious fluid which he had carried up laboriously from the sea, those baths might still be a flourishing concern. They might even have been floated by some local Hooley.

Of genuine touring—as distinguished from fast driving—I am passionately fond, and believe in measuring pleasure by the hour, and not by the mile. My last trip, carried out in August, was a regular Bohemian, or glorified tramp sort of excursion, and lasted four weeks. My party consisted of my secretary (by whose help I was able to keep my papers supplied with copy), my wife to look after me, my eldest son, aged sixteen, and my man Macdonnell. In the side baskets we carried two Holding tents, weighing, with bamboo poles, about 3 pounds each, and capable of holding (no pun intended) two people comfortably. Macdonnell was always able to get a bed in a neighboring cottage. A Mersey cooking stove, about 3 pounds weight, was our kitchen outfit, and with nearly twenty years' experience of camping to guide me, I can assure you we never wanted for a good, well-cooked meal. With this outfit we wandered through the center and south of Ireland, making Kerry our headquarters for some time.

I shall never forget our first night. I had been wearied with office work for weeks beforehand, and it was an unholy rush up till the last moment. At length my face was set southwards, and the evening of a glorious summer's day found us reclining beside the camp fire in a sheltered nook near Abbeyleix, while hard by stood the two little tents. There was a feeling of absolute irresponsibility, of freedom, of healthy, natural pleasure, which must have come down to us from pre-historic times when men took no thought for the morrow, and toiled not nor spun.

Our couches consisted of fresh, fragrant hay, covered with a thin rubber sheet, and for covering we had Jaeger blankets. Sleep, solid



and profound, was our lot. Only once did we awaken to listen to the burst of song with which the birds are wont to greet the morn, until about 6 A. M. the rays of the sun peeping in through the open tent door intimated that it was time to rise to another sixteen hours of unalloyed and healthy pleasure.

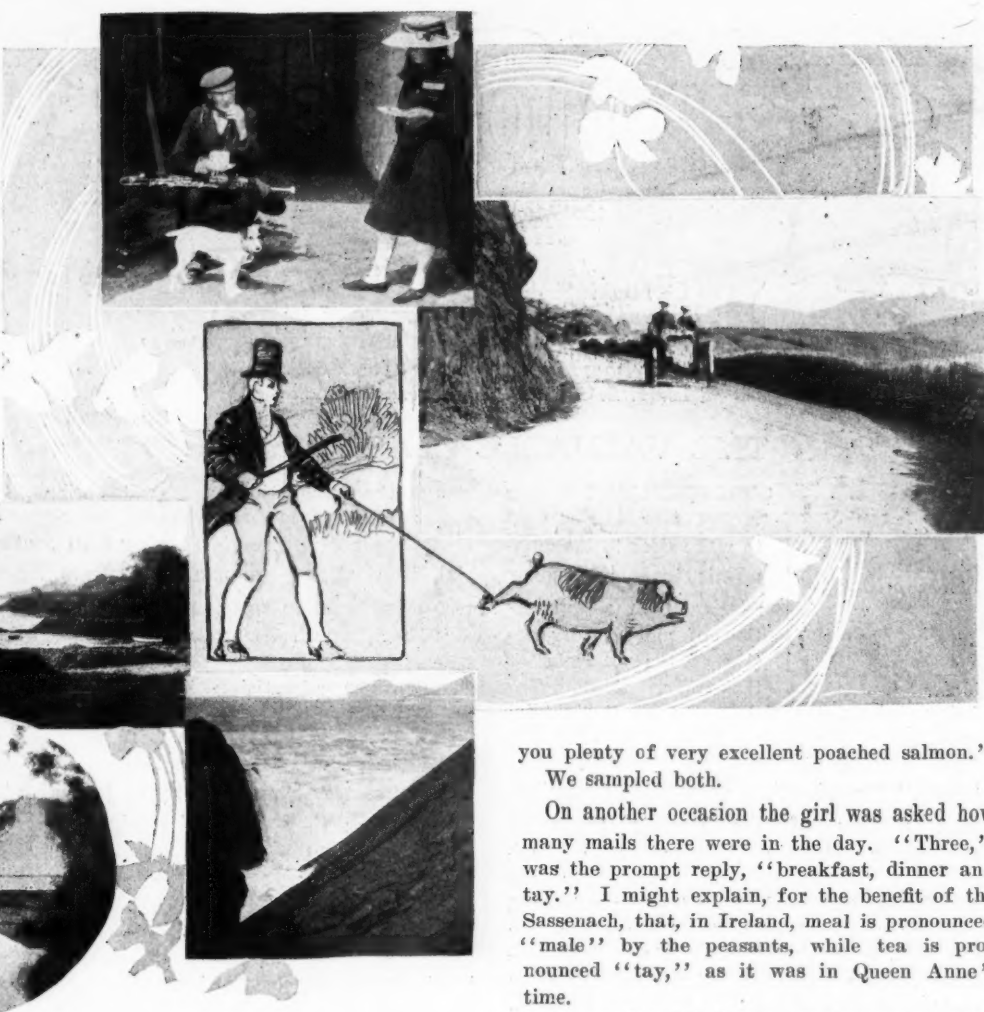
In this wise did we wander through the length and breadth of the land, setting up our "wee houseens," as the country people called the tents, where we listed, and meeting with such homely kindness and consideration everywhere as in itself was a liberal education in one's duty toward one's neighbor.

Of amusing and interesting incidents on this camping tour we had no lack. A few typical instances will suffice to show that the time did not hang heavy on our hands. It was on the third day of our tour that we were afforded a typical example of the beautiful, the tragic, and the humorous all combined into a single experience. We were speeding over a narrow bogland road in the neighborhood of Rathmore, the surface of which dipped responsive to the wheels of the car like thin ice beneath a skater. Right in front of us rose the cloud-capped peaks of Kerry, while the sunlight gleamed on the great level sea of bog which lay between.

The rich brown peat in stacks, with its ferny, aromatic odor, dotted the surface; between were pools of still browner water, black peat banks, heather-clad stretches dotted with white bog cotton, meadow sweet, and wild flowers innumerable, while over all floated the rich fragrance of bog myrtle, exhaling from secluded nooks, the honey-heavy odor of plain. Here a white-faced cottage on a reclaimed patch of land sent up its straight shaft of turf smoke, and there a group of bright, red-skirted colleens and merry gossoons collected the turf into heaps for drying.

Another half-mile, and a weird long-drawn wail is borne to us; it is the Irish keen—once heard, never forgotten; and as we turn the next bend a long funeral procession draws out its serpent-like trail across the face of the bogland, fifty or sixty horsemen bringing up the rear. Here were tragedy and tears, soon to be changed into wild mirth and laughter.

The road was narrow, and after passing a few of the riders we came to the conclusion that to persevere would hopelessly disorganize the procession, and doubtless cause more funerals; and, knowing that they would be turning off our road farther on, we drew up and waited. After a few minutes we followed at a respectful distance, but soon we came upon the whole cavalcade of horsemen ranged in military order up a by-road, and the moment we passed they joined in behind. By this time the head of the funeral had turned off the main road, thus leaving our course clear, and so we quickened up. The horsemen responded. With wild yells and shouts they broke into a gallop, and the springy bog road thundered to their hoofs. It was a grand escort. Horses and men entered into the spirit of the thing, and



you plenty of very excellent poached salmon." We sampled both.

On another occasion the girl was asked how many mails there were in the day. "Three," was the prompt reply, "breakfast, dinner and tay." I might explain, for the benefit of the Sassenach, that, in Ireland, meal is pronounced "male" by the peasants, while tea is pronounced "tay," as it was in Queen Anne's time.

At another hotel, one of the party asked, "Have you got any celery, waiter?" "No, sir," was the significant answer, "I depends on me chances." That man deserved an extra tip.

On another occasion the dinner was especially good and well served. At the conclusion one of the party remarked, "You're an angel, Pat." "I am, sir," assented Pat, "but I fly low."

At this same dinner one of our party was served a cup of coffee which unfortunately was "full of grounds," as he expressed it. Calling Pat to his side he said: "Pat, this coffee is no good. It is full of grounds and I can't drink it." "Shure now," said Pat, sympathizingly, "that's too bad, isn't it? But I can't help it, sor. I didn't bring it to yez." And without offering further aid he stepped back to the wall to await a request for something of a more reasonable nature. He was of the opinion that he was not responsible except for what he served.

And now I will conclude with a few remarks on the subject of Ireland as a touring ground. From the point of view of the speed merchant, it is a barbarously uncivilized country, for the utmost that can be accomplished with safety and comfort is an average of twenty-five miles an hour, and very few reach this limit. For the tourist, however, who can appreciate the most beautiful scenery in Great Britain, and who is capable of enjoying a complete change of surroundings, and intercourse with a very interesting people, Ireland will afford a happy hunting ground. The road surface is good, bad, and indifferent; and the tourist who sketches out a route at random is most likely to favor the bad specimens. For this reason it is all important to have a suitable route sketched out beforehand.

never was such a procession seen in those parts before.

There was one ear-piercing yell which rose above all the others and seemed to issue from very close quarters, and glancing back, I saw a horse's nose sticking over the back of the tonneau, and above it the head of a big, red-haired man, with a grin which seemed to split his entire face, and eyes that were dancing mad with excitement. He was brandishing a stick over the heads of my passengers, and at intervals gave vent to a wild whoop. If the tonneau had been occupied by strangers who did not know the country and its kind-hearted inhabitants, they would certainly have thought that their last hour was imminent. It was one of the wildest and most characteristically Irish scenes I had ever witnessed, and I purposely kept the car on the third speed until the turn was reached, so that we might get the full benefit of it.

There was no end to the receptions tendered us when passing through quaint villages where the inhabitants had never heard of the "devil wagon." In every place they received us with open arms, pet members of the household sharing in the ceremony. One villager with his "missus" and three children were lined up behind a low railing of the fence feasting their eyes upon us, and the end of the line was brought up by the family pig, which with front feet and nose upon a lower rail was no less interested a spectator.

The hotel waiters, male and female, are an unfailing source of amusement. I will give a few examples. On one occasion we asked the girl in attendance for poached eggs. She looked a bit nonplussed at first, but, after a little hesitation, replied, "There are no poached eggs in the place, sir, but I think I could get



THE VALUABLE CLASS PAPER



CONSCIENTIOUSLY has MOTOR AGE long sought to make clear to the automobile trade its policy relative to the publication of matter descriptive of the products of the trade, this policy

being, briefly, the publication of straightforward descriptive matter, optional with the editorial department, and in no wise intended to "jolly" the advertiser or possible advertiser. This making of the reading pages of the paper entirely independent of advertising dictation and solely for the benefit of the readers of the paper has not always "made a hit" with the advertiser, who has been, in many instances, educated to consider the reading pages of a class paper as trading stamps given in return for advertising patronage.

To those of the automobile trade who do not fully appreciate the honesty and consistency of the MOTOR AGE policy as explained by MOTOR AGE, is offered the following excerpts from an address delivered recently before the Boston Boot and Shoe Club by Franklin P. Shumway, one of the leading advertising agents of the country and one who handles the advertising of several prominent automobile concerns:

"To work any of the plans mentioned successfully, one should have his goods fairly well distributed among the retailers, and to help do this the trade papers are invaluable assistants, and rightly used will be of more value than many a traveling man. Our committee, knowing that I have spent several hundred thousand dollars during the 20 odd years in the trade papers of this country and Europe, asked me to inform you why I had felt justified in being so large a user of these mediums, and why I had expended so much of this money in preparing original illustrations and text for this class of advertising. I can answer both questions in ten words: 'Because results proved it paid my customers.'

"To confirm in your minds my position in this matter, let me cite a few experiences of trade-paper advertisers in other lines of business. The Parry Mfg. Co., of Indianapolis, which is one of the largest concerns in its line, says: 'In promoting the sale of goods to retailers, it is absolutely indispensable to advertise in the trade journals. If your trade journal advertising does not bring replies, there is a reason for it, and we are convinced that the replies are materially reduced by the commonplaceness of much of the advertising.'

"You can hardly buy a piece of plated silverware without patronizing some of the facto-

ries of the International Silver Co., which reports: 'If space is purchased in a good trade paper and then filled with good material, illustrations, arguments, etc., profitable results are sure to come.'

"The Nazareth Waist Co. products are sold wherever dry goods stores exist. It says: 'Trade-paper advertising is a success with us. We have been in them for 13 years, and our advertising has always been aggressive and informing. If manufacturers would take as much interest in their trade journal advertising as they do in designing, buying, etc., they would meet with great success.'

"A Boston man, Mr. Croft, of Reuter & Co., brewers of Sterling ale, tells us: 'The trade journal is an arsenal out of which the advertiser may select weapons with which to win in the battle of competition. We have used them regularly for years.' Need I spend further time on this? I think not, except to tell you that I could give you 118 similar affirmations from firms in 63 different lines of business.

"A word regarding trade papers themselves. There are in the United States about 700 class or trade journals, each catering to some vocation or business, and a survey of this wide field will cause you to admire the en-



TIRRING up of the amateur and professional question, which is threatened by the committee having in charge the latest attempt at revising the racing rules, would seem unnecessary and inadvisable at this comparatively early stage of the racing game. The promoters, manufacturers and critics of this branch of the sport, who have been heard in the matter, pronounce against the interjection of such a cause of endless dispute, confusion and debate into the racing rules. The Europeans have not found it necessary or desirable to thus segregate cars or drivers. Neither promoters, makers nor drivers of racing cars ask it here. Whatever demand exists seems to come from a few owners of stock cars, whose pleasure it is to enter contests for this class of machines.

The racing game is logically a game of racing, not stock cars. Interest in this branch of the sport is on the increase and wealthy enthusiasts ready to equip themselves with racing machines for its pursuit are growing more numerous. It will not be long before this class, added to the makers who use this

ergy, wisdom and skill displayed by their publishers.

"Let us consider for a moment one of the notable trade papers, the Northwestern Miller, one of the leading trade journals of the world. What has given it its prestige? Its publishers always make a paper that every man in that trade knows he must read. Why? Because it's not filled with clippings or free puffs, but of solid facts and suggestions gathered from all over the world at enormous cost. How can they afford to do it? Because hundreds of the manufacturers pay them a liberal price for large advertisements, and don't ask for columns of worse than useless puffs read by no one and despised by all, except, possibly, the advertiser who, when he stops to think a bit, must despise himself for asking for a puff that he knows is the same identical old fake doled out weekly.

"One of our club members was talking with me the other day about discontinuing his advertising in two of our trade papers, but feared to do so, he informed me, because the representative of one of them had told him his name would not be mentioned weekly if he did not advertise. I asked him if he really felt these notices were doing him any good, and he said: 'Yes, they have been especially good lately.' I turned to the paper in question, and read him from six different issues puffs that had been given another manufacturer, but substituted his name for the name of the manufacturer for whom the notices were printed. After I finished reading them he said: 'There, Shumway, weren't those good notices of my business?' I then showed him how I had trapped him and urged him, with all my heart to stop having these senseless puffs printed about him and his goods, and when he advertises to say something worthy of his goods, and of his reputation, that would add to the dignity and standing of his business. Remember, gentlemen, the fewer puffs, the more the trade journal is respected by the subscriber."

THE AMATEUR DISTINCTION

form of advertisement, will be able to supply entries in sufficient numbers to fill out a program made up entirely of racing car events at any of the leading circuit meets. Such owners buy these high priced flyers especially to match them against the best the trade and professional drivers can put forth. Those that drive the cars themselves deem themselves worthy pilots against all comers and ask no indulgence or coddling through the formation of an amateur class. Such a class, besides, would in the end probably result in an amateur definition, which would bar them from the open competition, for which they buy racing cars and themselves enter the racing field.

This leaves the only possible demand for an amateur distinction from owners of stock cars ambitious to enter them in races for this class of machines. They are said to complain of factory cars driven by trade experts being pitted against them in these events. An amateur definition that should apply to stock car racing alone and not to racing machine contests would be illogical, confusing and an absurdity. It is a necessary matter, however, for promoters to give races for owners not actually connected with the trade. Such contests will be on several programs of race meets now in the course of promotion.

Jump Sparks

As American automobiling boasts only eleven national organizations, MOTOR AGE suggests the following: The Steam Car Builders of America, the Association of Automobile Body Manufacturers, the Amalgamated Manufacturers of Automobile Nuts and Bolts, the Association of Licensed Side Entrances, the Association of Publishers of Automobile Journals, the National Association of Dealers of Unlicensed Automobiles, and the United Brotherhood of Automobile Traveling Men.

The Chicago Record-Herald says: "Hetty Green's son has become an automobile enthusiast and is having two big racing cars built. The boy must have struck it rich somewhere on his own account." Furthermore, if E. H. R. is not careful in his motor expenditures he may be disinherited.

Messrs Gerrie and Holland, of Muttering and Sputtering, are worried, because so many of the men now interested in the control of the sport of automobiling came from the sport of cycling. Gerrie forgets the day when he was a Canadian bicycle racing man.

To the long list of initials denoting prominent automobile organizations should be added the C. C. C. C. which means the Chicago Colored Chauffeurs' Club. Incidentally, the four C's deny that they are related in any way to the three A's.

If you add up all of the sales made to agents at the different shows and all the sales made by these agents to local customers at the same shows, you will have some bully figures relative to the output of automobiles this year.

The odd feature of this A. L. A. M.-A. M. C. M. A. business is that the A. L. A. M. must beat the A. M. C. M. A. to win, while the A. M. C. M. A. has only to keep from being beaten to win. Which job would you rather have?

As picker of what is about to happen in American Automobile Association circles you can't beat Motoring and Boating. If you bet the other way every time you are sure to win in the long run.

It is said that automobilists from Syracuse quit the smoker at the Buffalo show in disgust. Perhaps the Syracuse smokerist is used to a stiffer game.

The 20-mile speedway project in New Jersey would sound more alluring if it were not linked so closely to the name Pennington.

Wanted, a young Wellington. Address all applications to the A. M. C. M. A.



"GET BUSY, BOYS, WE'VE GOT TO PULL HIM THROUGH."

THE WEEK

Rational automobile law for Montana. California passes new state automobile law. Scovel amends his radical New Jersey bill. Automobile body makers in Paris go on strike. Washington makes preparation for coming show. Course for German reliability trials for motor cycles selected.

French motorists plan celebration of Paris-Bordeaux-Paris road race.

One firm holds automobile show in Syracuse, and has good attendance.

Memphis automobilists after Barney Oldfield as attraction for a race meet.

Boston show closes, having been by far the best local one of the year.

Syracuse Automobile Club decides to have all local motorists become members.

Buffalo Automobile Club membership reaches 500, and the waiting list is growing.

New York State County Engineers' Road Superintendents' Association meets in Utica.

Tour routes for part of Chicago-New York route under preparation by Toledo Automobile Club.

President Loubet, of France, announces the possibility of his witnessing the Bennett cup race, and French interest in the event grows apace.



Here it is: "The General Committee of Propaganda, Organized by the Encouragement Society of the Automobile Club of France, the Syndicate Boards of the Automobile, Cycle and Allied Industries, and the Syndicate of the Sporting Press, under the High Patronage of the Syndicate of the Press." It is French, it has four presidents and it intends to look after the automobile end of the exposition of sports to be held in Paris in 1907.

The Boston show was certainly all right, but its success does not alter the fact that in sending out its list of exhibitors the management rang in both the local agents and the manufacturers they represent as exhibitors, thus to swell the total to make New York and Chicago look like the proverbial 30 cents.

If the A. C. A. and the N. A. A. M. tie up to hold a New York show in addition to the A. L. A. M. affair, and the A. M. C. M. A. holds a show and there is another importers' show, there will be all kinds of fun in the vicinity of Broadway next winter.

The senior salesman of the company owning the Selden patent has left that company to accept the sales managership of an "unlicensed" company. "Inside information" seems to be that the Selden patent is not going to seriously interfere with the general manufacture of automobiles.

Judge Dunne, one of the Chicago mayoralty candidates, started one evening last week in a carriage for a St. Patrick's day blow-out. A runaway horse collided with his outfit and the judge and his wife were spilled. Inasmuch as Dunne has been a decided motorphobe the accident may cause him to see the error of his way.

In June the celebration of the tenth anniversary of the first long-distance automobile race will occur, and it is noticeable that in these 10 years the speed of automobile road racing has been quadrupled.

In the account of expenses of the French eliminating race of last year an item of \$87.40 is charged to indemnity to police captains. Eighty-seven forty would go a long way among police captains in this country!

The automobile club of St. Paul asserts that all of the reckless driving in that city is by motorists from Minneapolis. Do the St. Paul club men go to Minneapolis to do their scorching?

The regulation of automobiles in Wilmington, Del., is under the auspices of the sewer department. This is rubbing it in.

MORE ROOM NEXT TIME

H. M. Flagler May Build Big Hotel in Havana—Other Echoes of the Cuban Motor Meet

New York, N. Y., March 20—H. M. Flagler, the Florida east coast railroad and hotel magnate, has recently visited Havana after an interval of 6 years. The Havana Post is authority for the statement that as a result of his visit he has decided to build a hotel with capacity for 600. This will be good news to next year's invaders; for the racing pioneers found the hotel accommodations inadequate for present demands. With the great influx of race followers next year's tournament is sure to bring, the problem of hotel accommodation will be a serious one. E. J. Conill, president of the racing association, when the invaders left, was offering land in a suburb free to a syndicate having in mind the building of a hotel.

Senator Morgan is reported to have seen Mr. Flagler before the latter's departure for Havana and told him of President Conill's readiness to make a land concession for a hotel enterprise. It is possible that Mr. Flagler and Mr. Conill may have met with the outcome above noted. Mr. Flagler owns the steamship line between Miami and Havana and is pushing his Florida East Coast railroad south to Key West, which is but a 90-mile voyage from the Cuban capital. Mr. Flagler owns hotels at Nassau and in view of his ownership of the steamship line and his evident intentions to extend his railroad and chain of hotels to Key West, a hotel at Havana would be the logical inference to complete his winter touring circuit.

Another bit of Cuban news of interest to the recent invaders is that Dr. O'Farrill, who as mayor presented the Havana cup to President Conill, has been made Secretary of State in President Palma's new cabinet.

Frank Stewart Smith, secretary of the Bahia Honda Land and Improvement Co., whose hospitality to the invaders was marked, is now on a visit to this country.

H. S. Rubens, another of the visitors' hosts, will remain in Cuba until the building of his winter palace at Mariel is completed. Mr. Rubens, by the way, was the orator at the recent unveiling of the statue of Marti, the patriot, in Central Park, Havana.

GOOD ROADS CATCHING ON

Syracuse, N. Y., March 20—The Onondaga county board of supervisors Friday named Frank E. Bogardus to be county superintendent of highways for a term of 3 years beginning April 1, at a yearly salary of \$2,500. A resolution was also adopted petitioning the state engineer for the improvement of about 207 miles of road, which, with 107 miles heretofore covered with petitions, makes a total of about 314 miles on which the board has taken action. This is the first time Onondaga county has had a highway superintendent and it is hoped that the roads will be greatly improved as the result.

The bill introduced into the assembly by Assemblyman Martin L. Cadin, abolishing the toll roads of Onondaga county has passed the assembly, and it is thought it will have no trouble passing the senate.

The first annual convention of the New York State County Engineers' and Road Superintendents' Association was held last

week at Utica. Representatives from ten counties were present. Those in attendance were: Charles E. Fowler, Dutchess county; George C. Diehl, Erie; J. C. Ringwood, Herkimer; Sydney S. Snell, Lewis; J. W. McClintock, Munroe; W. P. White, Oneida; C. H. Smith, Orange; C. T. Allison, Rockland; John T. Hallinan, Ulster; George R. Byrnes, Westchester. Mr. Diehl is the president of the association. Ways of improving highways were talked over and a general discussion was held. There is a possibility that the National Roadmakers' convention may be held at Binghamton.

JOPLIN PROGRESSIVE

Joplin, Mo., March 18—This town of about 27,500 inhabitants has more owners of motor cars in proportion to its population than, probably, any other city in the state, and perhaps, even, in many other states. At the beginning of the year there were about eighty cars here, among which could be found some of the cheapest, as well as some of the most costly automobiles made in the United States. One of the principal reasons why motoring is taking such impetus here is that Joplin has an excellent street system and the roads for many miles in the surrounding country are of macadam or such hard formation that traveling is generally good.

The outlook for the season's sales is good and many orders have already been placed with the local dealers. A notable fact with the orders thus far placed is that they include several from the best known physicians, who will probably abandon their horse-and-buggy traveling system. When the warm weather will have made its appearance, one of the first things the local motorists intend to do is to form an automobile club to promote races and touring competitions, look after the good roads question and the automobile laws in this section.

MEMPHIS READY FOR RECORDS

Memphis, Tenn., March 17—A hot rumor from Hot Springs conveys the information that Barney Oldfield is going to bring the Green Dragon and the other animals in his menagerie to Memphis for a try after some of the world's records. Of course it is a known fact that Oldfield's press agent always announces that all track records are in danger before Barney arrives in any city, but there seems to be some grounds for his claims in this case. Memphis has undoubtedly one of the fastest tracks for light harness horses the world has ever known. Over the Driving Park track, owned by C. K. G. Billings, of Chicago, Dan Patch has gone faster than any other pacer and Lou Dillon has gone faster than any other trotter. In fact, at one time, the local track held as many important light harness records as all the other tracks in the country put together.

There is no reason why the track should not be equally fast for automobiles. In nature of the soil, and in scientific construction the Memphis track has never been equaled. Horsemen agree that the Memphis turns are easier to make than those of any other track in the country and, if they are easy for horses to make, in the same proportion they ought to be easy for an automobile. The turns are not abrupt and the track is broad at all places. If Oldfield is in earnest there is little doubt that arrangements can be made for a series of races over the local track.

RACING TO START EARLY

Tournament at Lakewood, N. J., in April Will Inaugurate the Metropolitan Season of Sport

New York, N. Y., March 20—The first important racing event in sight for metropolitan owners and tradesmen is the Lakewood tournament, which is scheduled for April 25-29. Alfred Reeves, its manager, who has returned from Virginia Beach, is busy laying out the program. He is not giving out the details yet, however, or in fact, saying much about it pending the action of the New Jersey State Legislature on the bill now before it to permit county officials to suspend speed limits for road contests.

Following the Lakewood tournament track racing will begin in earnest. The meet at Brighton Beach on May 6 will give an early opening to the metropolitan season. The next positive date is May 30 at Empire City track. It is probable that there will be a meet at the Readville track, Boston, the same day. Providence will have a 2-day meet May 28 and 29.

In reply to Chairman Morrell's circular letter asking for applications for dates to be sent in before May 1 a flood of requests is pouring in on the racing board, which seems to assure a practically unbroken series of Saturday meets from the beginning to the close of the season.

A prospect for the building of a triangular 5-mile track, having a 1½-mile straightway, on Staten Island, with a club house annex, is in contemplation although not actually in execution yet. Word also comes that still another automobile speedway is planned for New Jersey. Atlantic City is to be its location, and a company to construct and operate it has been incorporated under the laws of New Jersey with a capital of \$100,000. It is named the Auto Speedway Co. of America, and the incorporators are Walter H. McDonough, Louis Kuenkle and James O. Walsh.

Col. E. H. R. Green, the Texas member of the racing board, is now out with the offer of a challenge trophy for 100 mile contests. The conditions call for the first race to be run on the Dallas track, on which his Pope-Toledo recently established a track record for the distance of 2:06.42%. Col. Green will be prominent in the track racing game the coming season. Having bought the Packard Gray Wolf, he is to have it overhauled.

M. G. Bernin, the racing pilot of W. Gould Brokaw, has gone to France. The object of his visit is reported to be to drive a Renault in the elimination contest for places in the French team in the Bennett cup race. He will also, it is said, buy two racing cars for Mr. Brokaw, one for road and the other for track racing purposes in this country.

FOR 50 CENTS A MILE

Philadelphia, Pa., March 20—A unique test, the result of a wager, and which may possibly result disastrously to the parties concerned in the affair, is now being made in this city. On Saturday last during a discussion anent the merits of the Maxwell car, of which he is the local representative, Cadwalader W. Kelsey offered to bet \$500 that his car was capable of a thousand-mile non-stop run without any previous tuning-up or preparation of any kind. Seeing a chance to make some money, Morris Wetherill, a local automobil-

ist, accepted the wager, the stakes being put up at once with J. A. Davidson, another well-known local motorist.

It was decided to make the test on Broad street, the city's crack automobilizing highway, and Kelsey started off at once, first sending a messenger to the North Broad street headquarters of the Maxwell with instructions to make all necessary arrangements for fuel, lubricating oils and relays of chauffeurs to handle the car. Kelsey ran the car 54 miles before handing it over to the next man. The conditions allow changes of operator every 4 hours.

Ten of the 14 miles of Broad street are asphalted, and the car is at present engaged in reeling off miles over that portion of the smooth, wide thoroughfare. A rain-storm which set in at 3 o'clock Sunday morning and continued for 12 hours rendered the test anything but a pleasure trip during its continuance.

A curious feature of the affair is that the test will surely be completed in much less than 100 hours and that all the parties concerned will render themselves liable to prosecution for exceeding the local speed limit. It is greatly to be feared that, if the present rate of progress be continued, and the actual figures leak out, someone will be hunting bail before the close of the week.

HO, FOR NORTH YAKIMA

North Yakima, Wash., March 17—The town, or, as it is called here, city of North Yakima, is located in the central west of Washington, in the midst of one of the most highly developed irrigated districts of the state. Hops, fruits and vegetables are produced in an abundance which must be seen to be realized. From \$200 to \$500 has been cleared on the crop from 1 acre of ground, a fact which can be verified by communicating with the Commercial Club of North Yakima. It is such conditions that have aided in making the two banks of North Yakima rank with the best in the country.

In this locality there is plenty of ready cash for investment if some interesting investment is offered to the people. The rural roads are above the average and during the present summer a state road through the Cascade mountains and running southwest to Mount Ranier will be completed. This will be an ideal touring road and by it tourists can go from here to Seattle, Tacoma or Portland. The roads in the eastern part of the state are more or less sandy.

North Yakima, with a population of 7,000, is located in the midst of a district with a population of 30,000. The only railroad is the Northern Pacific, and as yet street railroads have not been introduced. The leading road, running to Puget Sound, is up the Natches river. For years this road has been open for travel for many miles through the forest, which commences 20 miles from town. The Natches river is a mineral stream flowing from the mountains and in season provides excellent trout fishing. At Ahtanuin, another summer resort, is to be erected a large hotel and pavilion the coming season.

At present but three automobiles are used around here, but there might as well be thirty or forty. The men are here and have the money ready. It is up to the big manufacturers to get hustling salesmen in North Yakima and sell the machines.

PRESIDENT MAY SEE IT

Loubet Hopes To Witness the Bennett Cup Race—Enormous Cost of Motor Car Road Races

Paris, France, March 8—The most important development in the plans for the Bennett cup race is the announcement by the Automobile Club of France that President Loubet will very likely be one of the spectators. A delegation of the club, consisting of Vice-President de Dion, Marquis de Chasseloup-Loubat, Chevalier Rene de Kuyff, Prince Pierre d'Arenberg, Gustave Rives, and other club members, was received by the president day before yesterday. Marquis de Dion acted as spokesman and pointed out the importance of the coming race and especially the international importance it has taken since last year, when the German Emperor witnessed the event. President Loubet answered that when he is informed of the date on which the race is to be run he will immediately advise the committee whether or not he could be present, it being probable that he will be able to be on hand.

After the visit to President Loubet the delegation visited the ministry of the interior and invited Minister Etienne to witness the race. The offer was readily accepted and the official told the delegates that he took much interest in the welfare of the automobile industry and that he is keeping himself well posted.

When the announcement of the possible visit of the president was heard in Clermont-Ferrand, in the vicinity of which the start and finish will take place, it is reported that the inhabitants started to dance in the streets and that some even raised the national flag in their elation. Already a great many hotels, lodging houses, and residents of the city have rented many of their rooms and it will not be long before all available rooms will have been taken.

The preparations for the French eliminating race are proceeding steadily. Thus far fourteen cars have been re-entered. They consist of three Panhards, three Richard-Brasiers, one Gobron-Brillie, three Darracqs, three Clement-Bayards and one Charron, Girardot & Voight. It is rumored that Mors and Renault have decided to withdraw. There was a mysterious dinner of interested manufacturers night before last, at which there were present Messrs. Darracq, Brasier, de Dion, Clement, de Turckheim, Charron, Gobron, Turcat, Mors, Serpollet, Krieger, A. Richard, Peugeot, M. Richard, and representatives of the Hotchkiss, Ader, and Gillet-Forest companies. The gathering was for the purpose of discussing the eliminating race but its outcome cannot be learned. "Oh," said de Dion, to the insisting newspaper men, "we just met to try a new brand of cigars."

A visit to half a dozen manufacturers who are building racers for the French eliminating race reveals the fact that some of the cars will have new features, the most important being that the cars are all built lower, especially the Richard-Brasier, and in some cases shorter than previously. Owing to the nature of the roads and the many sharp turns, the smaller cars will, it is argued, have the advantage. Brasier was the first to make this remark after having gone over the circuit. There will probably be more cars with propeller shaft drive among the French racers. Although the motors will be

much lighter, they will be more powerful. All will be of greater bore than last year and their speed will be decidedly greater. In most instances the stroke will be less. Most of the cars will have the magneto ignition while on two there will be both magneto and accumulator ignition. Some will have the motor cylinders cast separately while others will have the cylinders in pairs. It is likely that most of the cars will weigh the full 1,000 kilograms.

Now that the Automobile Club of France has decided that there ought to be only one big road race in France each year, discussion has begun as to whether it is advisable to have even one, owing to the expense involved, both to the organizers and to the manufacturers. In order to show what it means to hold a big road race, Max Richard, who was secretary of the committee which arranged the French Bennett eliminating race of 1904, has made public the bill of expenses of that race. The total is \$30,181.11.

The division of expense was as follows: Sprinkling the 58 miles of the circuit des Ardennes with westrumite, \$4,537.75; ground rental and erection of grand stands, \$5,300.03; transportation and pay of soldiers, \$3,867.19; fencing the road, \$3,335; work of governmental road engineering department, \$3,154.23; expenses of chief of local road commission, \$2,532.79; indemnity to railway company, \$793.52; expenses of Automobile Club des Ardennes, \$2,001.63; pay of timekeepers, \$1,289.29; expenses of special committee, \$1,034.31; donations to local charities, \$490; postal and telegraphic stations, \$354.71; flags, bearsards, caps, etc., \$303.98; miscellaneous indemnities, \$270; printed matter, \$253.80; rental of bascule bridge, \$240; contestants' official boxes, \$90; indemnity to police captains, \$87.40.

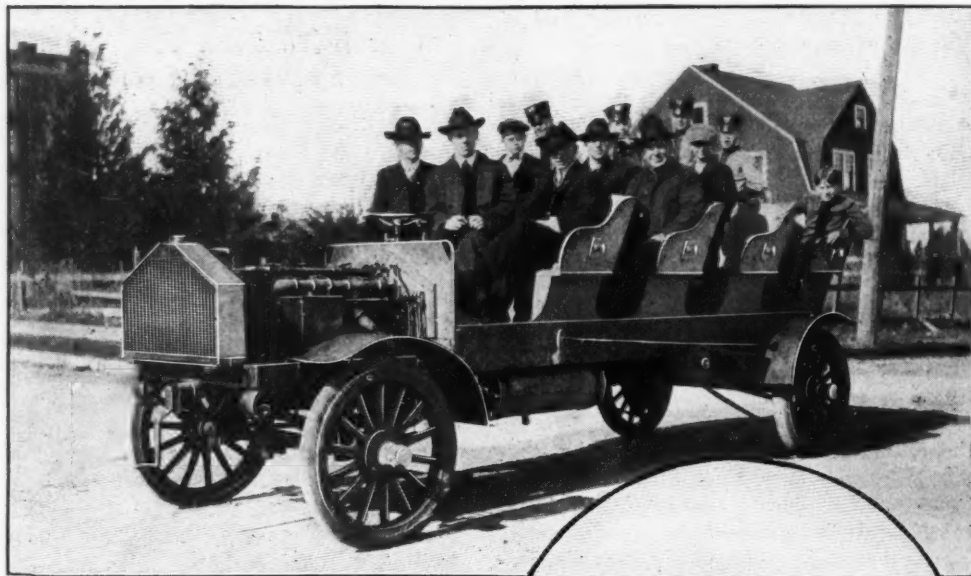
The entry fee per car was \$1,000 and as twenty-nine entered, \$29,000 was thus secured towards meeting the expenses, and the Automobile Club of France had to make up the balance, or \$1,181.11. This year the situation is entirely different, as there will be two big races, the eliminating and the cup race. The expenses of both events will probably amount to about \$50,000. If there should be twenty-seven entries, as is expected, this would only secure \$27,000, but if the foreign countries which are to take part in the cup race subscribe each \$5,000, as it is claimed they have agreed to do, the expenses will be fully covered.

From the standpoint of the automobile manufacturer, it was stated by one of the oldest, that every big race in which he has entered three cars cost him at least \$55,000, in which everything is included, such as cost of cars, salary to drivers, testing, preparations, etc.

INTERNATIONAL BOAT RACE

New York, N. Y., March 21—The Automobile Club of America has received official notification from the Automobile Club of Great Britain and Ireland concerning this year's international motor boat race, which was formerly known as the Harmsworth cup race. The date of the race has not yet been set, but it will be run some time in September, in the bay of Arcachon, France, as the latter country won the cup last year. The distance of the race will be 30 to 35 nautical miles, and three boats may be entered by one country, the entry fee being \$100. The entries close at the Automobile Club of France, July 1.

SPEED INCREASED TEN-FOLD



Portland, Ore., March 18—From "prairie schooner" transportation at the rate of 20 miles a day, to twelve-passenger automobiles running 20 miles an hour, is the transition that is taking place in methods of travel in central Oregon, where large irrigation projects are attracting settlers to land that heretofore has been regarded as arid and worthless.

The Deschutes Irrigation and Power Co., which has placed 300,000 acres of land under water in the vicinity of Bend, found that the Columbia Southern Railroad Co. had changed its mind about extending the road from its present terminus to Shaniko, 70 miles to the Bend country, and it became necessary for the Deschutes company to provide means of communication with the outside world. The company immediately secured a private right of way from Bend to Cross Keys, near Shaniko, and constructed a road, which is to be rolled and oiled with crude petroleum, to abate the dust in summer and mud in winter, and contracted with the A. J. Gill company, of Portland, to build a motor car, which has just been completed and will be placed in service on the road within a few weeks.

The contract price of the machine was about \$3,500, and it was built under guarantee to run 20 miles an hour, but has in its trial trips easily made over 25 miles an hour over average country roads about Portland. It carries twelve passengers, and is equipped with a 40-horsepower four-cylinder gasoline motor, compressed air brakes and whistle. The picture was taken on one of its trial trips, before the dash board, bonnet, mud guards and canopy were attached.

The motor is of typical vertical construction, water cooled with rotary pump, cellular radiator and fan. Lubrication is by a pressure system with a sextette of eight feeds on the dash. There are also on the dash in sight and reach of the driver a quadruple spark coil, two air pressure gauges, the commutator and the carburetor regulator. The power is transmitted to the rear wheels through a flat face friction clutch, a three-forward speed and reverse sliding gear transmission set and double side chains from the cross differential gear countershaft. The tanks contain enough fuel and water for a trip of 100 miles on one charge. The car



THE NEW AND THE OLD MEANS OF TRANSPORTING SETTLERS IN OREGON

is fitted with two oil side lights and a lens mirror searchlight. By making the wheel base extra long, easy riding is obtained in each seat. The four seats are very wide, accommodating three adults, with room to spare. Steering is by a regulation steering wheel on a vertical column, the usual control levers and pedals are used.

KINKS IN U. S. CUSTOMS

Washington, D. C., March 20—A customs circular has just been issued by the secretary of the treasury at Washington. It relates to the importation of automobiles for touring and racing purposes and sets forth, among other things, that automobiles of foreign manufacture imported into this country by the owners personally for bona-fide touring purposes—for actual use by the owners for touring only, provided such owners are non-residents of this country—are entitled to free entry under bond for a stay of 3 months, in accordance with a customs circular of June 20, 1902. The provision is made that such owner shall present at the time of making entry a certificate from the United States consul at the port of exportation based upon the sworn statement of the owner to the effect that said automobile is brought over for touring purposes only, that the owner is in nowise connected with any automobile business, and that the car is not to be used for any commercial or business pursuits whatsoever while in this country. The car may accompany the owner or come within 30 days before or after his arrival. This privilege of free entry for touring purposes shall in no case be granted to the same car more than once in any one year.

The privilege of free entry under bond con-

dition as required by a treasury decision of May 27, 1902, is also applicable to automobiles brought into this country by non-residents for the purpose of racing or taking part in other specific contests of automobiles, but not for display in shows or exhibitions of any kind.

In either of the above cases where the importer has been unable to obtain the required consular certificate through no fault of his own, the collector of customs shall have the power to waive the same upon evidence produced before him that shall satisfy him that the said automobile was brought over for touring or racing purposes only.

Automobiles to be free of duty as household effects must have been used abroad for a period of 1 year or more by the owner or his family. The owner's family shall be held to include his wife, children, and his parents, brothers and sisters, or any of them residing with him abroad. Automobiles used in business pursuits abroad are not exempt from duty under paragraph 504 of the existing tariff act as household effects. The period of use does not have to be consecutive nor immediately precede the importation.

Free entry will not be accorded to an exchanged machine which machine was not used abroad for a year or more by the present owner unless the exchange was necessarily made on account of defects in the first machine, by substitution or replacement in the usual course of business of a new automobile of the same make, the same power, and the same cost as the original machine. The facts relating to the exchange should be embodied in the declaration.

Secretary Shaw informed the MOTOR AGE man that the circular was issued with a view to settling a number of questions that had arisen at the port of New York on the importation of cars ostensibly for touring and racing purposes, but which had evidently been put to other uses.

One of the closing acts of congress was the passing of what is known as the Philippine tariff revision law of 1903, which President Roosevelt has approved, and which will take effect May 1 next. It provides, among other things, that automobiles for persons or merchandise shall pay duty at the rate of 20 per cent ad valorem, and storage batteries at the rate of 5 per cent ad valorem. Small boats, launches, etc., imported into the Philippines, either set up or knocked down, are dutiable at 30 per cent ad valorem. The expression "imported into the Philippines," is held to mean "brought into the jurisdictional waters of the islands in or on another vessel, or towed therein by another vessel, as distinguished from coming into these islands under the craft's own motive power."

MOTOR CARNIVAL IN HOLLAND

Berlin, Germany, March 8—Automobile races and other competitions will form the principal attraction of the carnival of sports which will be held in Scheveningue, the Nice of Holland, in July. The Automobile Club of the Netherlands has granted a sanction for the motor car events, for which nearly \$2,000 in cash will be distributed as prizes. The kilometer standing start and finish race for touring cars will be held July 10 and the following day the racers will engage in a standing start kilometer battle. Motor boat races are scheduled for July 12, while on July 13 there will be a body, elegance and flower competition.

HONOR TO THE PIONEER

French Automobilists To Celebrate Anniversary of Levassor's Winning of First Big Road Race

Paris, France, March 8—On June 11 it will be 10 years since Emile Levassor won the first Paris-Bordeaux-Paris road race, and it is planned to celebrate the anniversary. The principal affair will be arranged by l'Auto and at which the most prominent manufacturers of France and other European countries are expected to participate.

There is probably no other man connected with the industry in France credited with having done as much for its progress as Levassor. He is the Gottlieb Daimler of France and his countrymen think that his work has been fully as great, possibly even greater than that of the German pioneer.

Emile Levassor was born January 21, 1843, in Beaulieu, a little village in the state of Seine-et-Oise. After having studied at the Chaptal college and later at the Central school, where he was given a diploma as engineer of arts and manufactures, he went to Seraing, Belgium, where he secured a position with the Cockerill steel concern. Thence he went to the Durenne factory in Courbevoie, near Paris, and in 1873 became a partner in the concern of Perrin & Panhard, manufacturers of wood working tools. Perrin died a few years later and the name of the concern was then changed to its present title, Panhard & Levassor. In 1900 the French government made Levassor a chevalier of the Legion of Honor, and it was about that time that he became acquainted with Gottlieb Daimler, the German genius who then had completed his four-cycle motor. The engine seemed to please Levassor for he became much interested in it and suggested that experiments be made with one of these motors to serve as propulsion for a boat. These tests were made at Etretat, but the results were not as satisfactory as anticipated. However, far from being discouraged with the motor, Levassor applied it to vehicles and its success was immediate. In 1894 the first Panhard & Levassor motor car was seen in the streets of Paris. A year later, the Paris-Bordeaux-Paris road race was held, the distance being 740 miles. There were three Panhard & Levassor cars, three Peugeot's, two Rogiers and a Bollee. A Panhard won, covering the 740 miles in 48 hours 44 minutes, while the next best to finish was a Peugeot, which required 59 hours 48 minutes.

This first great achievement in road racing made the name of Panhard & Levassor famous within a few hours after the race was over, and from that time on it has meant the leadership of the French automobile industry. In that first long race Levassor drove the car himself, and in every town or village through which he passed he was greeted with cheers, while in Paris there was an exceptionally enthusiastic demonstration.

The following year Levassor started in the Paris-Marseilles-Paris road race. While he was about 6 hours ahead of his nearest competitor he met with a serious accident in trying to avoid running over a dog. He was severely injured and for several days it was feared that he would not live. He remained an invalid and April 14, 1897, he died. The funeral was simple. It is only in the last few years

that the French automobilism has awakened to the fact that this man was really the founder of the industry which now employs several hundred thousands of men in France, and in which millions of dollars are invested.

The Automobile Club of France started a subscription for the erection of a monument to the memory of Levassor. About \$6,000 was received, and Dalou, one of the best known French sculptors, was intrusted with making the bust, which was completed by Lefevre, another sculptor, Dalou dying before finishing the work.

FERTILE MOTOR BOAT FIELD

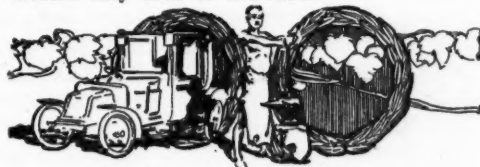
Washington, D. C., March 18—Does the 5-per cent ad valorem duty keep most American manufacturers from attempting to secure part of the trade in motors and motor boats in western Norway? So far as is known only two American companies have attempted to do business in these lines in Norway. One manufacturer of kerosene motors, with an agent in Bergen, placed 22 of his motors of from 3 to 22 horsepower last year, and an agent of American gasoline motors in Christiania has also sold a number of motors, but no determined effort seems to have been made to win and hold the trade.

In truth the installation of auxiliary motor powers in Norway has been very slow in comparison with what it has been in Denmark and other countries. Two years ago, perhaps, not a fishing boat was equipped, but the general belief is that motors will be rapidly adopted from now on. While very few have thus far been installed; those that have been have given a great impetus to the demand, and it will not be a great while before every fisherman who is able to do so will equip his boat with an auxiliary power of some kind.

No more fertile field for motors and motor boats can be found than in Norway. The west coast has a fleet of several thousand boats engaged in fishing, and the fishermen are fully awake and will adopt such methods as will increase their returns by increasing their catch or bringing it to market quicker. Many business people travel entirely by water, clergymen visiting their parishioners must have their boats, and then the pleasure seekers, not in small numbers, would also welcome motors that could be relied upon. Probably no place furnishes a greater variety of wants for good motors than western Norway.

No one must conclude that because the field is a good one sales will be easy. Though opportunities have been neglected for a time, the trade is now being sought after keenly by Danish and Swedish manufacturers. For the purpose of confining this trade to Scandinavian manufacturers, there has been organized the Northern Motor Union of Manufacturers, whose avowed intention is to cooperate to develop this trade for the Scandinavian manufacturers to the exclusion of others.

The duty on motors is 5 per cent, but it has been proposed to increase this to 10 per cent. It would be well for American manufacturers to protect themselves by patenting their inventions in the countries of Scandinavia, covering all features of special merit that exist in the motors they seek to introduce.



HAS MONEY BACK OF IT

Millionaires in Milwaukee Concern That Is To Build Four-wheel Drive Commercial Wagons

Milwaukee, Wis., March 20—Backed by millionaire capitalists, the Four-Wheel Drive Wagon Co., of Milwaukee, has passed from the experimental stage and is about to enter upon the manufacture of its vehicles for commercial use. Its backing cannot be questioned. Nelson P. Hulst, retired vice-president and general manager of the Oliver Mining Co., of Duluth, the mining wing of one of the greatest steel corporations of the country, is president. William W. Allis, of the Allis-Chalmers Co., is a director, and Edwin Reynolds, one of the heads of the same great machine company, is another director. The aggregate wealth of the backers is in the tens of millions. Preparing for active work in what is considered a comparatively new field, the company has elected officers as follows: President, Dr. Nelson P. Hulst; vice-president and general manager, H. Theodore Hansen; secretary and treasurer, Godfrey V. D. Titsworth.

The Four-Wheel Drive Co. will manufacture freight trucks after patents obtained by Mr. Hansen. The principal feature of its machine is that power is transmitted to each of the four wheels. A test of the experimental wagon was made a few months ago after a heavy snow, and a more extensive test was made only a few days ago. The wagon carried a gross weight of 27,575 pounds uphill and over icy roads. The application of power to the front wheels is made through devices, the patents for which belong to the company and besides the main features, the company holds patents on other devices. The tires, for instance, are of wood and are guaranteed not to split. They cost \$30, while it is claimed rubber tires suitable for the use required would cost \$580. The wagon weighs 7,600 pounds. Mr. Hansen says his company has had inquiries from nearly every civilized country on the face of the globe and that it has ample proof of a great demand for satisfactory freight vehicles. It is claimed the company already has over half a million dollars' worth of orders.

The company will soon build a factory in Milwaukee near the outskirts on the West Side, as its present quarters are little more than large enough for an experimental station. Plans for the improvements are now being made and orders are being taken for June delivery. The Four-Wheel Drive Wagon Co. was incorporated in 1903 with a capital stock of \$1,000,000 provided for in the articles. At the time of its incorporation many automobile men were inclined to look upon the whole deal as a hoax. The inventor proceeded, however, regardless of general opinion, and the test of a few weeks ago served to stir up considerable interest in the company's operations. The announcement of the personnel of the backers which came with the election of officers has occasioned no little surprise, together with the general belief, resulting from a knowledge of the past achievements of these men, that the company will do all it promises in the way of improvements, outlay of capital and progress.

HUB DESERVES PRAISE

Boston's Local Show Runs Its Course Smoothly and Profitably—Sales Greater Than Expected

Boston, Mass., March 20—There is no more show. Boston and her dealers are now enjoying a rest from the labors of last week. The latter are incidentally balancing their books to learn the volume of business transacted at this latest show of the year. That the show was one of importance in the industry was proved by the long list of displays and also by the presence here during some one or more days of the week of the leading manufacturers or their representatives. There is no denying that the city and her dealers have scored a success, and it shows what can be accomplished by good management and the hearty co-operation of the dealers. It was a dealers' show in every sense of the word. It was promoted by the dealers, the displays were made by the dealers, and they have every reason to be justly proud of their work.

The fact that all of the automobile papers award high honors to this show is proof positive of its success. There are no harsh words of criticism heard anywhere regarding the management or any portion of the show itself, the only objection voiced being against the smoking of some of the men at the different stands.

The volume of business transacted at this show was greater than anticipated and will run into the millions. Just exactly what is the figure cannot be positively stated. Still it is a fact that every exhibitor secured an order for at least one machine, and in several instances, such as the Winton, Pope, Electric Vehicle, Pierce, White, Locomobile, Peerless, Packard, Cadillac, etc., the bulk of the season's consignments to Boston was disposed of. In the case of at least three of these concerns the Boston dealers have gone to the home factory to see what can be done towards increasing the consignments.

Nor were the automobile people the only ones to reap benefit from the show, as the power boat manufacturers and exhibitors were likewise successful.

A year hence it is believed greater successes will be achieved by the Boston Automobile Dealers' Association, but just where it will place additional exhibits cannot be stated. The great building is the only one in Boston available for such an exposition, for exposition it really was, and if the number of exhibitors increases something new must be done. The basement, main floors and the galleries were used last week, although, to be sure, more than ordinary amount of space was allotted to the individual exhibitors. More displays mean smaller spaces, and this, of course, means congestion, a thing lacking at this show. There was not too much room, but just enough to permit a proper and pleasing display of goods and to permit an opportunity for the visitors to inspect the exhibits without having to force a way through narrow crowded aisles or being unduly crowded in the spaces.

The men who were responsible for the success of this exhibition, Messrs. George H. Lowe, J. H. MacAlman, E. A. Gilmore and Chester I. Campbell, the latter acting as manager, are deserving of due credit. To stage and handle such a show as this meant months

of hard work, and the expressions of appreciation heard on every side must indeed have been gratifying to them.

There were two smokers show week. One, that of Thursday evening, was given in Paul Revere hall by the dealers' association and proved thoroughly enjoyable. The attendance was that of the average show smoker. On Friday evening a private smoker was held at Hotel Langham.

VERY MUCH HONORARY

Paris, France, March 8—The "General Committee of Propaganda, Organized by the Encouragement Society of the Automobile Club of France, the Syndicate Boards of the Automobile, Cycle and Allied Industries, and the Syndicate of the Sporting Press, under the High Patronage of the Syndicate of the Press," was organized a few days ago, in connection with the promotion of the international exposition of sports to be held here in 1907. There are four honorary presidents for this long-winded committee: Former Minister Jean Dupuy, who is now president of the Syndicate of the Paris Press; M. Delaunay-Belleville, the automobile manufacturer; A. Picard, who was general commissioner of the last Paris world's fair, and George Berger, one of the best known deputies of France. The latter was chosen as the acting president. There is also another special committee, the directors' committee, with five honorary presidents, one acting president, seven secretaries, a delegate from each sports group or federation of clubs, a delegate from the municipal council and one from the press.

While this universal show will cover every sport and while each of them will be well represented, the automobile section will form the most important and imposing part of the entire exhibition and everyone in the trade is working to insure the success of this section of the exposition. President de Zuylen, of the Automobile Club of France, and Messrs. de Dion, Darracq, Brasier, Mors and numerous other well known manufacturers, believe that the exposition will surpass anything that has ever been attempted in the automobile line and their especial efforts will be to make the automobile section greater and more interesting than the annual Salon de Paris. Both the government and the city of Paris will lend their financial assistance to the show, which, it is expected, will rival any world's fair ever held. The railroad companies of almost all countries of Europe have announced special excursion trains, while steamship companies announce that they will make special rates between New York and Paris. Parisians say that this will be a fair like only Parisians can make and are already sure of the outcome.

THE NEW YORK SHOW

New York, N. Y., March 20—General George Moore Smith, of the Automobile Club of America show committee, is reported as an authority for the statement that the A. C. A. will promote an exposition for automobiles in this city next winter if a suitable building can be obtained. The club is said to be seeking an armory for the purpose. Nothing definite in the matter, however, will probably be known until the new N. A. A. M. show committee is appointed and a conference between the two former partners in the Madison Square Garden show is held.

DENVER A SURE CENTER

So Situated That Automobiling Is Bound To Increase and Retail Trade Likewise Boosted

Denver, Col., March 18—Denver is sure to become one of the most important automobile centers in the United States. It will not be a manufacturing town, owing to its location, but as a touring and pleasure center it is well located for its beautiful surrounding country will attract many seekers of pretty scenery and good roads, as the latter are in better condition, generally speaking, than those of most states of the east.

The trade in Denver was good last year and the dealers have made preparations for a great season. It is up to the manufacturers to furnish the goods and it is likely that if they send their agents what the latter ask, it will mean the sale of several hundred thousand dollars worth of cars the coming season.

The Felker Automobile Co., 1535 Tremont street, is considered the pioneer agency of the west. Mr. Felker handled the first gasoline automobile in the west, which was the Autocar. He has steadily built up his business until his garage rates among the first. He handles Franklin and Buick cars, also making a specialty of second-hand cars.

Tom Botterill, manager of the Denver branch for the George N. Pierce Co., of Buffalo, says the outlook for the coming year in the automobile business is bright. He already has orders for five large touring cars and several more for Stanhopes. His store, located at 1643 California street, is one of the finest in the city and has a large repair shop fully equipped.

The Automobile Livery & Repair Co. has recently opened a large garage, at 1553 Tremont street, under the management of A. Brott and F. A. Trinkle, who are known to be experts along this line. They will carry on an extensive renting and repair business besides manufacturing batteries and spark coils. They are also the western agents for the Wayne car.

The Matheson Automobile Co. has erected a building at 1420 Court place and has taken the agency for the Queen, Reo and Moline cars. The company will also make a specialty of renting and repair work.

George Herring, who is the western agent of the Stanley steamer, is located at 1548 Broadway. He makes a specialty of storage and repairs.

George E. Hannon, who had the western agency for the Oldsmobile last year, is making great preparations for the coming season. He has a large garage at 1441 Welton street, where he will maintain an extensive renting and repair business and will have the agency of the Yale, Northern, Oldsmobile and possibly some other line not yet determined.

J. Hervey Nichols Jr., has one of the finest equipped garages in the west at 1640 Broadway. The building is 50 by 125 feet, containing a first class machine shop, a large room for all kinds of repair work and storage capacity for eighty machines. He will handle the Winton.

Charles Bilz, proprietor of the Colorado Motor Garage Co., has taken in addition to the White steamer the Packard and Elmore, for this season. He has increased his facilities for doing business by enlarging his building, making it 50 by 150 feet, with a large base-

ment fully equipped as a repair shop. On the first floor there is a machine shop and charging plant and back of the office a reception room with every convenience for the comfort of his patrons. Mr. Bilz has already disposed of several cars this season and hopes for a repetition of last year's sales.

The Colorado Automobile Co., 1510 Court place, will handle this season the Pope-Toledo and Cadillac. R. R. Hall, manager, says the sales for 1904 amounted to over twenty-five cars and that he now has orders for fifteen for this year. The Colorado Automobile Co. is the pioneer here in the livery business, having the famous "Seeing Denver Cars" which are kept busy daily touring the parks and places of interest in and about the city.

E. R. Cumbe, who has had the agency for the Rambler for the past season, has closed with the Mitchell Motor Car Co. and will handle the two lines this year. His salesroom and garage is large and well equipped.

NEW HAMPSHIRE ADVANCES

Manchester, N. H., March 17—The local dealers are getting ready for what they expect to be the biggest season that has ever been known in the automobile trade of this state. During the past few months, under the most unfavorable weather conditions, many prospective buyers have visited the dealers and have asked many questions about new machines. Some have placed orders that they may secure early deliveries, while others have given such assurance of buying that the local agent feels safe in prophesying excellent trade.

In this section of New Hampshire the roadways are in fair condition and the farmers seem to have become wise to the fact that good roads are as valuable to them as to the motorists. The passage of an automobile law which is satisfactory to the majority of motorists, and the fact that an appropriation was voted by the legislature for better roads, has given the dealers and the other workers for the promotion of automobilism hope of a great year. There are fully 100 automobile owners in the city and it is expected that at the passing of 1905 the automobile clan will have reached the 200 mark.

GERMAN MOTOR CYCLE TEST

Berlin, Germany, March 11—It has been decided that the German reliability trials for motor cycles and small cars will be run over a course starting from Eisenach, and extending to Berlin and back. June 2 and 3 have been selected for the trials. There will be three classes of small cars: Runabouts costing up to \$625; cars costing up to \$875, and tri-cars and motor cycles with trainers. The motor cycles will be divided according to horsepower into three classes: Not over 2, from 2 to 3, and over 3 horsepower. One, two and four cylinder motor bicycles will be allowed to compete.

WHITES FOR JAPAN

San Francisco, Cal., March 18—Justus Briggs, of Kobe, Japan, has been here for some time in the interest of the Japanese government, his purpose being to purchase automobiles. Last week he contracted with general manager C. A. Hawkins, of the San Francisco branch of the White Sewing Machine Co., for forty White chassis of the latest design, the bodies for which will be built in Japan.

CAPITAL TRADE IS GREAT

Washington Dealers Emerge From Hard Winter into Spring Blooming with Many Sales

Washington, D. C., March 18—Interviews which the MOTOR AGE representative had this week with the leading members of the local automobile trade tend to emphasize the prediction already made in this correspondence that the current season is going to be the greatest the local trade has ever known. Washington is just emerging from one of the hardest winters within the memory of the oldest inhabitant. Snow and ice have struck a hard blow to the automobile trade, but now that the open weather is at hand the dealers have picked up courage and the merry fight for business is in full swing. Just to show what has already been accomplished this month it might be stated that the local branch of the Pope Mfg. Co. booked nearly \$16,000 worth of business during the first 2 weeks of the current month. Other houses likewise report many choice orders for immediate delivery.

All hands are busy preparing for next week's show, which is expected to give the game a decided impetus. Demonstration cars will be more numerous than ever before, but a system has been devised whereby only those who appear to be likely buyers will be accommodated with free rides.

The trade is watching with considerable interest a new system of maintenance charges recently put into effect by the National Automobile Co., agent for the Oldsmobile. A fixed rate of \$30 per month has been made for storing and maintaining a 1904 or 1905 Oldsmobile runabout in running order, including all repairs and necessary parts not damaged through misuse or accident. This charge includes washing and cleaning the car, filling lubricating and grease cups, polishing and filling lamps, and calling for and delivering the car once daily. The rate is contingent upon a contract being made for 6 months or more. The rate for a Packard car on this same plan is \$40 a month. Of course it will be readily understood that this rate does not include tires or tire repairs. Manager Wood made a number of exhaustive tests before putting the new scheme into effect and he is confident that it will not only be a money-maker for his company but will serve as a good argument to use in making sales.

The National people have added the Orient and Studebaker to their line, consisting of the Packard, Pierce and Oldsmobile, and another important agency is also pending.

The Washington Electric Vehicle Transportation Co. gained an important victory in the suit instituted against it by William Grenfell, a minor, to recover damages to the sum of \$20,000. Justice Barnard, in the circuit court, directing the jury to bring in a verdict for the company. The allegation of Grenfell was that on March 26, 1904, the company placed outside its garage on Fifteenth street a number of barrels containing gasoline, some of which were taken by boys playing in the vicinity and thrown upon the person of Grenfell, an 8-year-old child. The gasoline became ignited from a candle with which the boys were playing, and young Grenfell was badly burned. Judge Barnard ruled

that under the circumstances the defendant company could not be held legally responsible for the injuries claimed to have been sustained by Grenfell.

A newcomer in the local field is the Haynes Automobile Co., the guiding spirit of which is Howard A. Rhine, the erstwhile bicycle dealer. The company has opened a garage in Stanton Court and will handle the Haynes-Apperson.

Charles E. Miller & Bro., have added the Buckmobile to their line. The Ford car is another of their recent additions.

FRENCH NOVELTIES SHOW

Paris, France, March 8—Yesterday afternoon the "exposition des petits inventeurs," or show for small makers and inventors, was inaugurated in the halls of the Grande Roue. Many well known manufacturers, dealers, sportsmen and members of the Automobile Club of France were present and were greeted with cheers by the hundred exhibitors. All were surprised at the importance this show has taken and it was conceded by its promoters, as well as by tradesmen, that within 2 years this show will be as important in many ways as the annual salon. Of course it is not expected that there will ever be many cars or even motor cycles shown, but there may be more accessories, parts and devices than at the big show.

Some of the novelties shown are the de Buissey transmission with oblique propeller shaft, in order to establish a stout live rear axle; a knee device by L. Penau, by which the driver of an automobile does not need to use both hands to drive the car; the Le Varlet folding mudguard; the Cheylus radiator which is made of copper tubes transversely laid and through which extend longitudinal tubes; Grandjean chains; the Blassieux foghorn, which, it is claimed, can be heard 2½ miles away; the Pignet wheel and the Frederick auto-clef.

GOOD HOME-MADE SHOW

Syracuse, N. Y., March 21—An automobile show is being held here this week at the building occupied by the Amos-Pierce Automobile Co. A large number of visitors have taken advantage of the chance to see the latest styles of machines and the tastily decorated rooms have been thronged. While the show is not held under the auspices of any organization it is yet a distinct success. It was proposed some time ago to hold a show under the auspices of the club, but the project died out and the Amos-Pierce company determined to hold one of its own. The event was set forth on posters put up from Rochester to Little Falls and from Watertown to Binghamton. The machines were arranged in booths on the same lines as those of the large shows, and the electrical decorations were superb. Flags and bunting were used in profusion. Cut flowers and asparagus vine added to the effect.

Manufacturers whose machines are on exhibition sent demonstrators and salesmen from the factory. The machines on exhibition follow: Locomobile, Columbia, Pope-Waverley, Buffalo electric, Pope-Toledo, Stevens-Duryea, Autocar, Pope-Tribune, Oldsmobile, Peerless, Orient and Packard. Including different patterns there were altogether twenty-four cars on display. It is probable that the club will conduct a show next year.

The Readers' Clearing House

QUESTIONS

SUGGESTIONS

ANSWERS

VARIABLE TIRE INFLATION

George, Ia.—Editor MOTOR AGE—I have a light touring car equipped with double tube detachable tires, $3\frac{1}{2}$ by 30 inches. I keep the car where there is no fire in the winter, and when the tires become thoroughly cooled I find that they deflate and the air goes entirely out of them. When starting on a trip, if I pump them up they seem to be all right, and as long as they are warm they remain inflated and I have no trouble with them, but as soon as they become cold again they go down. I have examined the inner tubes, and can find no leaks in them. Can you give a reason for this?—J. P. DENEUL.

The variable tension in the tires is due to the variation in the volume and pressure of air at different temperatures. Heating air causes expansion and if the volume remains constant the pressure rises. If the pressure remains constant the volume increases. In the case of an elastic chamber the volume and pressure would both increase with a rise of temperature. Suppose the tube contains a volume of 1 cubic foot. One cubic foot of air at 75 degrees Fahrenheit weighs .074 pounds. One cubic foot at 10 degrees weighs .0845 pounds. Assuming the tire air pressure at 75 degrees to be 100 pounds per square inch, the tire will contain 7.8 cubic feet of air or 7.8 times .074, or .558 pounds of air. The tire contains the same weight of air at 10 degrees, but at that temperature 1 cubic foot weighs .0845 pounds; so there it would have a volume of .588 times .0845, or 6.85 cubic feet, which corresponds to a tire pressure of 85 pounds, which certainly would produce a deflation in the tire.

USE OF DIFFERENTIAL

Hartford, Conn.—Editor MOTOR AGE—Will you kindly publish a diagram showing a cross section of a standard differential and explain how it operates when the car has a vertical engine in front, with side driving chains?—PHILIP C. ROBERTS.

The illustration shows the action of the differential. Its object is to permit the wheels to rotate at different speeds while they yet drive the car. This is necessary when turning a corner, for in turning a corner it is quite plain that the outside wheel makes more revolutions than the inside wheel, as it is describing a circle of larger diameter. In the illustration F and D are the rear axle sections, to which are attached bevel gears E and C, which are carried by the housing B. A bevel pinion G having a bearing in this housing, meshes with both of these gears. A sprocket A is riveted to the housing B. In the case of a double chain drive this differential is enclosed in the transmission gear case, but in the other systems it is placed on the rear axle. The differential serves the purpose above stated.

Referring to the illustration, assume the sprocket to be moved so that the top recedes. This

movement will carry the housing to which it is attached, and with it the bevel pinion G. Suppose the axle F to be held tightly, then as the housing moves the pinion G will be rotated on its own axis, because the gear E, which is fixed on the shaft F, cannot rotate. The shaft D being free to move is rotated by the pinion G and in the same direction as the sprocket wheel. As the pressure holding the axle F is gradually released it rotates slowly in the direction of the sprocket, and the axle D does not rotate quite as fast. When both axles have the same force tending to retard their motion they will rotate at the same speed. The sum of the speeds of the two axles is a constant, so that when one is held the other rotates twice as fast as normal.

In the double chain drive car there is a transmission box M containing the speed change gears. The shaft N is connected with the motor. Inside the case is a differential housing O and the two shaft ends J J. These connect with the gears similarly to the two axles F and D in the other illustration. On the axle ends are keyed sprockets H H. The rear axle P does not rotate, but two wheels L L rotate upon it, and each has bolted to it a sprocket K, which is connected to the corresponding sprocket H by side chain.

TRANSMISSION EFFICIENCY

Chicago, Ill.—Editor MOTOR AGE—Will you please answer through the Readers' Clearing House the following questions: What is the efficiency of the high grade bevel gear used in driving most of the higher priced cars? What is the efficiency of a high grade chain driven machine? Why do some manufacturers use a bevel gear and side chains also? By efficiency I mean the portion of engine power that is actually delivered to the rear wheels.—E. J. W.

The efficiency of the bevel gear drive is greater than that of the double chain as the latter system has the bevel gear and in addition two side chains and four sprockets, all exposed to dirt. In modern cars about 85

per cent of the power is available on the rear wheels. The general adoption of anti-friction and ball bearings throughout the transmission and axle bearings gives a still higher efficiency. The use of side chains takes the differential and live axles away from the shocks and tendencies to strain which are the result of being placed on an axle subjected to these. The bevel gear drive construction, when the wheels ride on an axle sleeve independent of the driving axles, which are contained in the axle sleeve and drive the wheel through dogs, possesses nearly all the advantages of the double chain without the exposure to dirt. This leaves the double chain with one advantage—the ease in making a change of gear, which consists merely in the substitution of the jack shaft sprockets.

CAUSE OF OVERHEATING

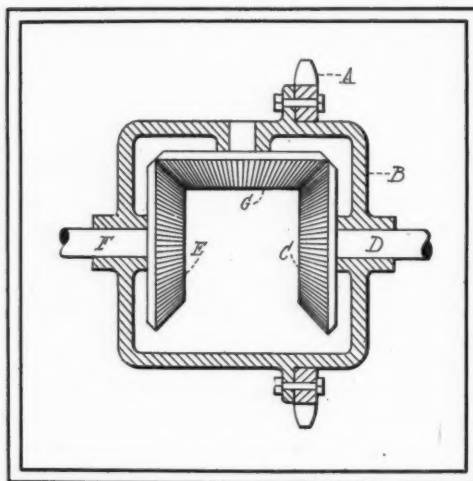
Providence, R. I.—Editor MOTOR AGE—Will you through the Clearing House explain to me and readers in general why an engine becomes overheated? Is it due to a too rich or too poor mixture, overcharge and consequently extra compression, advance of the spark too far, or exhaust starting to open too late and closing too soon? The cooling system of my car is of the thermo-syphon variety and the circulation is good.—A. HOWARTH.

There are a great many causes of overheating in a gasoline engine, among them being imperfect water circulation due to constricted water jacket space, too small a radiator or an inefficient forced circulation system. Lack of lubrication or the use of a poor oil will produce the same result, as will also operating the car with the throttle open and spark retarded on low speeds, instead of vice versa. The weak mixture, high compression and late exhaust opening will also tend to produce an excessive heating. These may all be remedied except the trouble is due to the cylinder design so that the water jacket space is not sufficiently large, or the designer did not avoid steam pockets. Tight pistons will, of course, produce overheating, but one would discover this the first time the car is run.

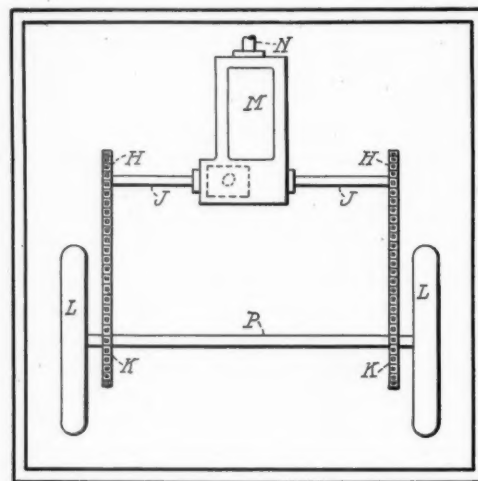
SETTING OF VALVES

Athens, O.—Editor MOTOR AGE—I would like to have you inform me through the Readers' Clearing House whether or not the valves and sparker are set the same on a gasoline engine as they are on a gas engine.—B. D. HEMPSTEAD.

The valve cams and ignition parts are set in the same relation to the crank throw, whether the machine is operated on gas or gasoline.



ACTION OF THE DIFFERENTIAL



THE DIFFERENTIAL ON COUNTER SHAFT

AFFAIRS OF THE CLUB MEN



THROUGH A SNOWY FRENCH FOREST—A FEATURE OF THE RECENT RELIABILITY TEST

Start With Hill Climb—The Worcester Automobile Club, of Worcester, Mass., intends to inaugurate its busy season by holding a hill climbing contest the latter part of April.

Garage for Club Men—Members of the Logansport Automobile Club, of Logansport, Ind., met last week and decided upon plans for a co-operative garage. There are thirty-two members in the club.

Election in Mobile—At the annual meeting of the Automobile Club of Mobile, Ala., Robert C. Morris was elected president; N. A. Richards, vice-president; John A. Mahon, secretary and treasurer. Five governors were also elected.

Hutton Lectures—Prof. F. R. Hutton, of Columbia University, gives an illustrated lecture Thursday evening this week at the New York Motor Club, of which he is a member, on the Evolution and Problems of the Motor Car.

Plans Nearly Ready—The building committee of the Automobile Club of America, of New York, has so far advanced in its conclusions that Secretary Butler says he expects within a short time to be able to give out for publication the plans as finally decided upon.

After All Motorists—The Automobile Club of Syracuse will hold a meeting during the coming week to devise plans for securing the membership of all automobile owners in the city. There are now 150 cars owned in Syracuse while the club has only about eighty members. There is thought to be no reason why the rest cannot be induced to join. Syracuse is now fifth in the list of the A. A. A. clubs. An innovation this year will be some all-day runs to points such as Utica and Trenton Falls. The club will make an effort this summer to stop reckless riding. Said Foreman Wilkinson, secretary of the club, to a MOTOR AGE man: "The club was organized with due regard for the public rights and comfort of others. It has been our idea from the first to discourage reckless driving on the part of a few who have no regard for the public. We try to persuade all devotees of the sport to enjoy it in a way that does not conflict with the rights of others. We want no extremists in the club and will not

only not assist them in getting in but will certainly assist them in getting out if necessary."

Boom in Buffalo—With a remarkable spurt during the week of the automobile show in Buffalo the membership of the Automobile Club of Buffalo reached the 500 mark set by the club's by-laws and now there are twenty-three applications waiting for the action of the club's governors in advancing the limit. Since last October when D. H. Lewis became secretary of the club the membership has nearly doubled. President A. H. Knoll believes that the great growth of the club is due to the earnest effort which is made by the organization to serve the best interests of the motorists of the city. Especially is the club's activity in regard to opposing unfair legislation one strong reason for the increase. During this summer the club purposes to be even more useful. A bureau of information regarding routes, conditions of roads, hotels, repair stations and distances will be kept at the office of the secretary for the use of club members who wish to tour in the western part of New York. Members who have taken runs about the country have been asked to contribute information to this file. Within a few days the organization will conduct a housewarming to mark the formal opening of its new rooms. The committee on runs and entertainments has provided several enjoyable indoor sessions this winter and is planning a larger number of club runs during the summer than has been held in any previous year of the club's existence. The club will be more interested this year, also, in race meetings and although no definite arrangements have been made it is considered possible that two track meetings may be conducted here. As to finances, the club is better off than ever. Receipts from the show were large and covered the cost of changes in the new club headquarters, leaving a balance on the right side of the book. The new club rooms will be occupied this week, Secretary Lewis planning to move his office immediately. For its uses the club has subdivided the large hall on the second floor into a lounging room, a secretary's office, dining room and toilet and coat rooms. It is

expected that the dining room will be a favorite resort of the automobile men at luncheon and dinner hours and that the daily gatherings of tradesmen which formed an enjoyable feature of life in the halcyon days of the bicycle in this city will be repeated by the automobile tradesmen.

Increase 100 Per Cent—The sixth annual meeting of the German Automobile Club was held in Berlin, March 9, and Duke Ratibor was re-elected president. The club has 729 members, of whom fourteen are women. Fifteen months ago the club had only 397 members.

Want the Governor—Good roads was the subject of the discussion at the regular meeting of the Iowa Automobile Club, in Des Moines, last week. It was decided that the annual election of officers will take place in April, and that Governor Cummins will be invited to attend the annual banquet.

Swell Country House—The Allegheny County Automobile Club, of Pittsburg, Pa., has bought Wildwood, formerly home of a Pittsburg millionaire, and which will be refitted and used as summer club house by the club. The place was purchased for \$18,000, and \$15,000 will be spent in improvements.

Innocent St. Paul—A committee of the St. Paul Automobile Club recently called upon the chief of police of St. Paul and asked him that stringent measures be taken against fast and reckless automobile drivers. It is said that the violators of the speed regulations are motorists from Minneapolis, and not those of St. Paul.

Organize Race Club—At last week's meeting of the Rockford Automobile Club, of Rockford, Ill., a new club was organized by the members. The new organization is called the Rockford Automobile Racing Club, and its object is to promote races and other competitions for motor cars. N. F. Thompson is the president; O. W. Johnson, the secretary, and Lee Burr, the treasurer. It was decided to try to arrange a race meeting for July 4, if the local driving track can be secured; if not it is likely that the meeting will be held on the race track at Beloit, Wis.

Busy on Tour Routes—The Toledo Automobile Club, which has been apportioned the task of mapping out a route from Cleveland to South Bend to be used during the coming season by tourists between New York to Chicago, has about half of the work done. W. D. McNaull, who is chairman of the committee appointed by the club to do the work, stated to a MOTOR AGE man that the route from Toledo to South Bend has been fully decided upon and sectional maps have been drawn, which go into a description of the route in every detail. As to the route east of Toledo, Mr. McNaull said that he would shortly go to Cleveland and confer with George S. Waite, of the Cleveland Automobile Club. Mr. Waite has covered the various routes from Cleveland to Toledo and knows perhaps more about the condition of the roads between the two points than any other member of either club. It is quite probable, according to information from Mr. McNaull, that two routes will be selected, one for bad and one for fine weather. With a view of remedying the weak spots along the route, Mr. McNaull expects to work through the good roads association and the state road commissioner.

LEGAL SENSE AND NONSENSE

NEW JERSEY TROUBLES

Present indications point to a long and hard summer for New York and Philadelphia automobilists who take liberties with the speed laws of neighboring states. While the proposed increase in the registration fee in New Jersey is likely to be knocked out, thus leaving the price for a state tag at the nominal fee of \$1, one of the amendments introduced by Mr. Scovel will possibly be written into the law—that making it legal to arrest speed law violators without a warrant. In the proposed compromise covering this point the advocates of the amendments agreed to a concession which would make it apply only to “all automobilists racing on the public roads.” If passed in this shape it would give to the civil authorities the privilege of deciding just when an automobilist is “racing.” If made to apply only to contestants in a previously announced speed contest for which the promoters have not secured the permission of town officials along the route, this would be no hardship; but if non-resident tourists who may be traveling at a fast clip can be taken from their cars, hauled before a magistrate without a warrant and fined to the limit, the amendment is defective.

The “farmers” who are pushing the proposed amendments have developed unexpected strength, and the automobilists will be lucky if they can bring about a compromise which will not prove decidedly irksome to all but the most staid automobilist. Some of the features of the compromise will be a maximum speed of 3 miles an hour on passing other vehicles; to bring a machine to a full stop if the driver of an approaching vehicle signals to that effect by raising his hand, etc. The “night in jail” bugaboo will probably be side-stepped by making the punishment for speeding in excess of 30 miles an hour a heavy fine. In this connection, it is also proposed by the automobilists to make the unauthorized taking out of an owner's car by a chauffeur a misdemeanor which upon conviction will entitle the culprit to 6 months' board at the expense of the state. To add to their woes, Philadelphia automobilists last week learned to their regret that the Delaware house of representatives had by a big majority passed the bill requiring owners of motor vehicles traveling the public roads of the state to secure a license from the secretary of state.

That the Jersey anti-automobilists are in earnest was made apparent last week when, fearful lest the amendments now being discussed prove too radical, and result in their death in committee, Assemblyman Manners, of Essex county, introduced a bill which provides for licensing all chauffeurs at \$1 per annum and making it a misdemeanor, punishable by fine or imprisonment, or both, for any chauffeur to drive a car in excess of 20 miles an hour; for a third offense the chauffeur to forfeit his license. Mr. Manners said that in his opinion the chauffeur, rather than the owner, is the real offender. A similar bill is in preparation for introduction in the Pennsylvania legislature.

Another New Jersey bill introduced last week was one giving townships the privilege of allowing speed contests within their limits, at the same time making the contestants alone responsible for any damage that may result. This measure, it is understood, was introduced by

the authorities of Lakewood, Ocean County, who evidently think it will be a good thing for them if metropolitan millionaires can be induced to burn up their roads at specified times. Still another automobile measure was added to the rapidly lengthening list now being considered by the New Jersey Solons when Mr. Riordan, of Hudson, introduced a bill providing that the present automobile law be so construed as to include all manner of self-propelled vehicles except steam and electric cars running on tracks of their own and traction engines used for road making or agricultural purposes. All of these additional measures were referred to the committee on municipal corporations, of which Assemblyman Scovel, of Camden county, is chairman.

TENNESSEE BILL AMENDED

Senator James E. Jetton has at last succeeded in getting his colleagues in the upper house of Tennessee's general assembly to pass a bill regulating the automobile and its luckless owner. But the measure isn't what it started out to be by any means. As amended, it provides for the registration of machines and gives a lien upon them to secure possible judgments for damages. It specifies that 20 miles an hour is the proper gait for the country and commands the motorist to toot successive toots upon his horn when crossing roads or streets. The bill has yet to pass the house and be signed by the governor before it becomes a law. Its chances in the house are considered fair.

THE SPRING WARNING

Complaints of refusal to obey the speed ordinances having begun to pour in with the advent of spring weather, the authorities of York, Pa., have warned local automobilists that any future infraction of the laws will be punished to the limit. Which means that the owner of any machine which exceeds a 7-mile-an-hour gait on the streets, or who fails to slow his car down to a 5-mile clip at street crossings, will be fined from \$15 to \$25 for the first offense and from \$30 to \$50 for each succeeding misdemeanor of the kind.

CLUB AFTER SCORCHERS

The Automobile Club of Pennsylvania, having given due notice to all local agents and managers, has announced its intention of prosecuting all automobilists who declare, through the public prints or by any other means, that they have broken records over any roads in the state—providing, of course, such record-breaking involves a fracture of the speed regulations. If the offense is committed in another state the club promises to assist in the prosecution.

FERRYMEN OBDUKATE

The employes at the Philadelphia ferries seem to be unaware of the fact that a new law has been placed on the statute books which permits the running of motor vehicles on and off ferry-boats under their own power. Complaints of having been compelled to push cars on and off the boats were numerous at the Automobile Club of Pennsylvania office last week, and the club's legal committee is now looking into the matter.



RATIONAL OREGON LAW

The Oregon legislature, just adjourned, enacted the first law in that state to regulate the use of automobiles on the county roads. The first six sections provide for registering each automobile in the office of the secretary of state, and numbering each vehicle. The number of each certificate, preceded by the letters “Ore.” shall be displayed on the back of such automobile or motor cycle, in light colored arabic numerals at least 3 inches high on a dark background. Vehicles of automobilists from other states, touring in Oregon, shall bear in similar manner the initials of the state from which they come, and shall have complied with the automobile laws of that state.

Section 7 provides that all motor vehicles when driven on any public road or street after nightfall shall have in a conspicuous place at least one light, showing white to the front and red to the rear, and shall have the license or certificate number of the vehicle painted in dark arabic numerals across the white glass of the lamp. Section 8 provides that every motor vehicle using gasoline for motive power shall at all times use the muffler within the limits of any city, town or village, and every motor vehicle shall be provided with efficient brakes, and every motor car driver shall be governed by the usual law of the road by turning to the right in meeting vehicles or persons moving in an opposite direction, and by turning to the left in passing vehicles, teams or persons moving in the same direction.

It is provided by section 9 that every person having charge of any motor vehicle, whenever upon any public street or way, and approaching any vehicle drawn by a horse or horses, or any horse upon which a person is riding, shall operate the automobile in such manner as to exercise every reasonable precaution to prevent the frightening of the horse or horses, and to insure the protection and safety of any person riding or driving the same. If such horse or horses appear frightened the person in control of the motor vehicle shall reduce its speed and, if requested by signal, or otherwise by the driver of the horse or horses, shall not proceed further toward the animal unless such movement be necessary to avoid accident or injury, or until the animal appears to be under control of its rider or driver.

Speed is limited by section 10, the legal rate being fixed at 8 miles an hour within the thickly settled or business portion of any city or village and in the country when within 100 yards of any vehicle drawn by horses; at 24 miles an hour outside of thickly settled or business portions of cities or villages on public roads, highways or parkways, and at 4 miles an hour at street intersections within the limits of any city or village. Section 11 specifies a general speed limitation whereby automobilists on any highway, street or parkway shall drive the same at any speed greater than is reasonable and proper, having regard for the traffic and use of the way by others. Racing on any of the said ways is forbidden.

The manner of prosecution is set out in section 12 to be that any proper officer who shall arrest the owner or driver of an automobile, motor vehicle or motorcycle for an infraction of any part of the act shall take the motorist immediately before a magistrate who shall hear the case at once, or, upon request of the de-

fendant and upon the depositing of \$50 as bail he shall adjourn the hearing for a time not less than 24 hours nor more than 5 days. If it be impossible to find a magistrate within a reasonable time from arrest, the arresting officer shall accept bail to the sum of \$50 for appearance of the defendant at the proper time. Fines not exceeding \$25 for the first, \$50 for the second, and \$100 for succeeding offenses are provided. The expense of recording a motor vehicle with the secretary of state is \$3.00.

AWAIT STATE ACTION

The proposed automobile ordinance of Wilmington, Del., was not acted upon last week by the street and sewer department as was intended, that body having decided to wait developments as to the progress of the state law. This change of front was brought about by the attorney of the Delaware Automobile Association, who explained to them the folly of an ordinance in each town for the numbering of machines, which would mean that each car would be covered with license tags, when by the use of one state law one license tag would be sufficient for each car, and so the detection of machines would be much simplified.

CALIFORNIA'S BILL PASSED

The automobile bill recently passed by both houses of the legislature in California is patterned in most details after the New York state law. The bill provides for the regulation of the speed of cars on all roadways within the state, for the registration of all drivers and the identification of cars and owners when such is demanded. Its passage means the doing away of the prohibitive ordinances now in force in many of the differ-

ent counties in the state. The bill was pushed through by the Automobile Club of California, which realizes that the bill is not all that many of the automobilists desire, but considering the prejudice that exists in many parts of the state, is a good step toward rational legislation. The bill received the support of the rural members of both houses because it contained sections for the registration and identification of all motorists. Part of the success of the easy passage of the bill was due to the fact that many anti-motorists thought it was being piloted along by enemies of the motoring public, the Automobile Club of California not letting it be known that it was the real father and pusher of it.

MONTANA READY

A new Montana state automobile bill has been passed by both houses of the legislature and approved by the governor. Automobiles are not numerous in that state but the legislators have taken time by the forelock in passing a bill. Clauses in the bill provide that operators of machines must not travel at a rate exceeding 15 miles an hour outside of the limits of any city, fire district or thickly settled part of a town, and within city limits, fire districts or thickly settled or business parts of a town at a speed not exceeding 10 miles per hour. On approaching horse-drawn vehicles when driving on the roads the driver of the automobile shall exercise all proper precaution to prevent frightening the horses and to insure the safety of the passengers of the horse vehicles. When horses appear frightened the driver of the motor car shall reduce speed and if requested by signal or otherwise by the horse driver shall not ap-

proach nearer the horse vehicle unless such is necessary to avoid accident or other injury, or until the animals are under control. When approaching intersecting roads or crossings speed must be reduced so that it is not greater than is reasonable and proper having regard to the traffic and the use of the intersecting ways. Violation of the law carries a penalty of any sum not exceeding \$200 or imprisonment not exceeding 60 days, or both.

HANEY'S INJUNCTIONS N. G.

By a decision rendered Tuesday, March 21, the appellate court of the state of Illinois reversed the "midnight" injunction granted by Judge Hanecy, of Chicago, in August, in favor of John Farson and other members of the Chicago Automobile Club, against the three park board commissioners of the city. The court did not take up the matter of validity of the automobile ordinances of the park boards, but simply the validity of the injunction of Judge Hanecy, who had issued it without previously giving notice to the commissioners.

MUTUAL PROTECTION

At a recent meeting of the General Automobile Association of France it was unanimously decided to take care, free of charge for 1 year, beginning March 1, any police court cases happening in the Seine and Seine-et-Oise departments, in which a member of the organization is the defendant. It was also decided to see the minister of the interior in order to obtain from him permission for foreign motorists to be unrestricted for 48 hours while they are complying with the French regulations. These steps were occasioned by the recent actions of peasants and police in the district who have made the motorists' lot unpleasant.

CURRENT MOTOR CAR PATENTS

Letters patent No. 784,949, dated March 14; to Herbert J. Leighton, of Syracuse, N. Y.—In his internal combustion engine the inventor has the inlet and exhaust ports uncovered by the piston and in conjunction with the inlet is a mechanical valve which is inactive when the timing apparatus is set for regular sparking, but which when the spark is retarded, automatically commences to operate and delays the entrance of the explosive mixture into the cylinder. A walking-beam action arranged on the side of the cylinder actuates the mechanical valve.

Letters patent No. 784,818, dated March 14; to Carl W. Weiss, of New York, N. Y.—Attached to an explosive engine is a fuel pump driven through a shaft that is chain driven from the cam shaft. The object of the pump is to supply fuel to the motor in proportion to the speed at which it is running, so that a uniform mixture may be had at all speeds. On the horizontal shaft driven from the motor are integral weighted arms pivoted transversely and centrally. On the arms are cams or eccentrics whereby the throw of the cam or eccentric is varied with the shifting of the arms. Between the cam or eccentric and the pump are suitable connections. The pump, which is of plunger type, draws the fuel from the tank and forces it to a chamber where it is mixed with air to form an explosive mixture.

Letters patent No. 784,738, dated March 14; to Tullio Giara, of Boston, Mass.—In the construction of the casing of a pneumatic tire

the inventor uses several layers of textile material in that part of the casing between the inner tube and the tread. These different layers have a binding substance to hold them together and also a flexible, resisting substance. Outside of these layers is placed overlapping metal plates for rendering the tire puncture proof. A rubber covering encloses the layers of fabric and the metal plates.

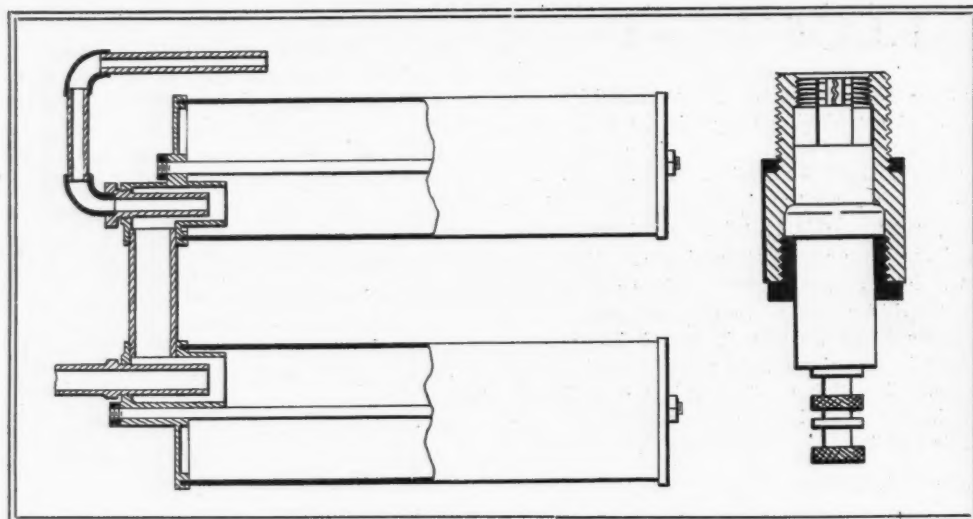
Letters patent No. 784,715, dated March 14; to Dennis E. Virtue, of Owatonna, Minn.—In a rotary water pump, whose cylinder has a peripheral discharge opening, is a detachable cylinder head provided with an upturned, integrally cast inlet spout entering the pump at its axis. This head is clamped in position and can be adjusted by a set screw. Within the pump cylinder the rotary piston has several curved propeller blades cut away or reduced in width at the axis of the piston so as to give sufficient clearance for water entering from the inlet pipe.

Letters patent No. 784,636, dated March 14; to Clement Smith, of Topeka, Kan.—In an air-cooled cylinder are used alternate layers of cast metal and a metal of higher thermal conductivity, the layers of the latter extending from the interior of the cylinder outwardly beyond the cast metal layers and being corrugated and perforated for radiating purposes. The cylinder head, similarly constructed, is made of two parts and there are rods connecting the two parts and passing through the flanges of the cylinder wall to the base of the cylinder.

Letters patent No. 784,626, dated March 14; to George McCadden, of St. Cloud, Minn.—The inventor, in a make-and-break spark device for gasoline engines, uses a stationary electrode or bolt, a movable electrode on which a flat steel plate with a beveled edge is fastened, the usual operating shaft on the motor and a plunger rod connected with this shaft and having on its upper end, a circular top with a beveled under edge. This circular top and the flat spring on the movable electrode are the contacts.

Letters patent No. 784,673, dated March 14; to Thomas M. George of Cleveland, O.—In this steering gear for automobiles there is combined with the frame and axle section, a split box embracing the axle section and having a bearing upon the frame and a pivot bolt extending through the box parts and the frame.

Letters patent No. 784,953, dated March 14; to Donald R. MacBain, of Jackson, Mich.—In a lubricator for any number of leads, in each of which the same pressure is needed, is placed a cylinder with a contained piston. The piston connects with a valve in the oil supply passage and at its opposite end is subject to the oil pressure in the oil delivery passages. Too great pressure in the oil delivery passages forces the piston toward the oil supply passage, closing the valve in this passage. As soon as the pressure in the delivery passages is normal the piston moves back, opening the valve in the supply passage. Where the piston is inserted and between the oil supply and oil delivery passage are two cored



BRUSH'S COUNTER-CURRENT MUFFLER

HINDMAN AND ALBRIGHT'S SPARK PLUG

oil ports, one passing on either side of the cylinder containing the piston. The control valve is placed at the junction of these pipes and the supply passage.

Letters patent No. 784,676, dated March 14; to John F. Hiltcher and Max Hiltcher, of Fullerton, Cal.—This device is a combination carbureter and muffler in which the hot exhaust gases from the engine aid in vaporizing the gasoline and also in heating the inrushing air leading to the mixing chamber. In the center of the cylindrical muffler is a cylindrical chamber into which is fed the gasoline at one end and which, from the other end, communicates with the mixing chamber. This central chamber is fitted with radial flanges. Surrounding the muffler chamber is an air heating chamber into which the cold air enters at the bottom and passes out of the top to the mixing chamber. At the end of the central chamber which the gasoline enters is an induction pipe for the admission of cool air into the gasoline vapor before it reaches the mixing chamber.

Letters patent No. 784,833, dated March 14; to Alanson P. Brush, of Detroit, Mich.—This invention relates to mufflers for automobiles. A series of cylindrical chambers are connected with each other, the exhaust entering each, through one end and passing out to the next chamber through a coincident opening so that the flow of inrushing gases meets the outgoing flow and interferes with the passage. The inlet pipe to each successive chamber is smaller than and concentric with the pipe by which the exhaust is discharged.

Letters patent No. 784,677, dated March 14; to Isaiah E. Hindman and Joseph J. Albright, of Columbus, Ga.—This device is a spark plug in which the shell or body is at its inner end provided with a series of spiral circular flanges. The central electrode at its inner end has radial longitudinal flanges. The sparking points are on the flanges at the points where those on the shell are opposite those on the electrode. The latter is adjustable so that unused portions of the flanges can be used.

Letters patent No. 784,759, dated March 14; to Canfield J. Rousseau, of Bridgeport, Conn., and Elmer C. Ferris, of Stamford, Conn.—This invention consists of a capillary tube vaporizer of heat retaining material located wholly within the working cylinder. The discharge end of the capillary tube points towards the cylinder head.

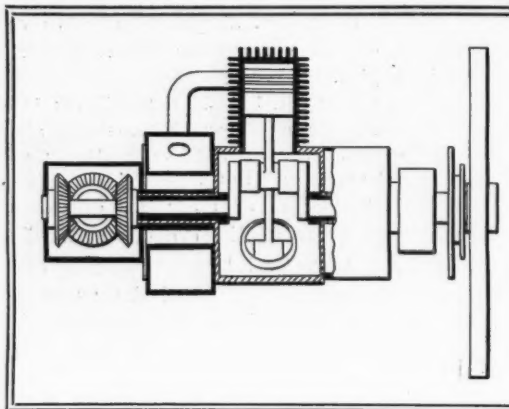
Letters patent No. 784,769, dated March 14;

to William Vincent, of Oakland, Cal.—In a speed varying mechanism is used a pair of disks axially mounted on a shaft, and a collar carried by the shaft between the disks. Through the collar are several pins parallel with the shaft and projecting through the disks. The transmitting belt bears upon the opposite surfaces of the disks, near the periphery when the disks are close together and near the axis when they are separated.

Letters patent No. 784,787, dated March 14; to Frederick E. Grout, of Orange, Mass.—In his hydro-carbon burner for steam cars the inventor uses a burner plate with parallel corrugations, the plate itself forming the top of a vapor chamber. In the corrugations are numerous burner openings, and there is a vaporizing coil above it. In the grooves of the plate are air-supplying pipes, each pipe having an opening beneath the burner. There are mechanical means to simultaneously control the supply of liquid fuel to the vaporizing coil and the number of burner openings to which the fuel is distributed.

Letters patent No. 784,788, dated March 14; to Charles J. Gustafso, of Chattanooga, Tenn.—This is a force-feed lubricator in which is a casing extending within the oil tank and having at its outer end guides for a hollow reciprocating plunger. At the inner end of the casing an inlet valve serves to connect the tank and interior of casing. In the outer end of the plunger is an outlet valve protected by a hollow cone. Between the opposite end of the plunger and the inner end of the casing is a coil spring which tends to force the plunger outward. The reciprocating action of the plunger causes the flow of oil through its nozzle.

Letters' patent No. 784,607, dated March 14;

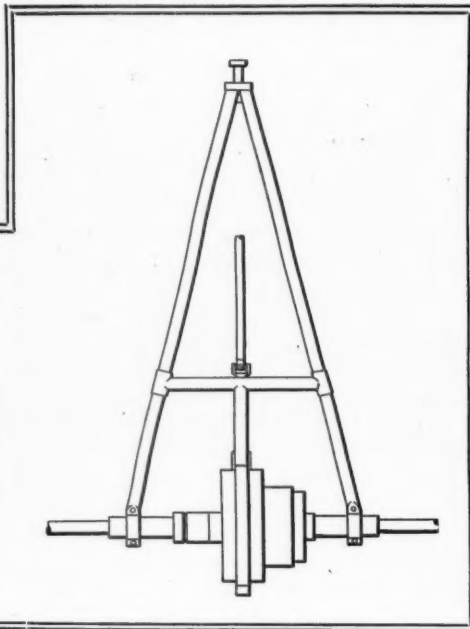


SAWTELLE'S REVOLVING MOTOR

to Rollin H. White, of Cleveland, O.—This invention is a two-speed gear connected with a differential gear on the rear axle of a car. Solid with the differential is a bevel gear meshing with a bevel gear on the short transmission shaft which is axially in line with the drive shaft from the motor of the car. On this short shaft is a sliding gear by means of which the engine shaft can be connected direct with the transmission shaft and differential, or the engine left free or the drive obtained to a counter shaft and then back again to the transmission shaft and the differential gear.

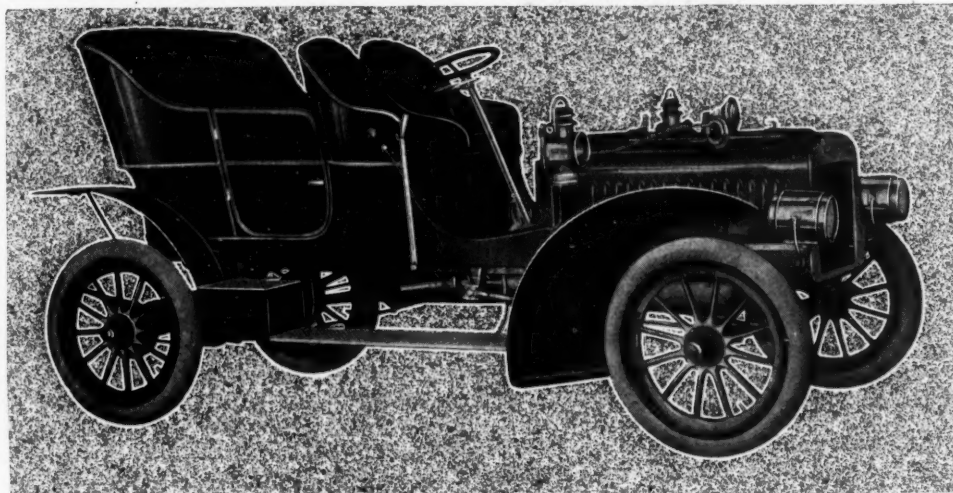
Letters patent No. 784,808, dated March 14; to Charles A. Sawtelle, of San Francisco, Cal.—This device is an air-cooled, three-cylinder gasoline motor with the three cylinders mounted radially in the same vertical plane. The three pistons are connected with one throw on the crank shaft, the crankpin bearing of each connecting rod occupying one third of the crank pin. The crank case revolves in one direction and the crank case, cylinders and pistons revolve in unison with it in the opposite direction. All valves and other engine arrangements are enclosed in an extension of the crank case. On the end of the crank shaft is a bevel gear meshing with a similar gear on a drive shaft. On a sleeve on the same end of the crank case is a gear similar to that on the crank shaft and which meshes with the bevel gear on the drive shaft but on its opposite side.

Letters patent No. 754,642, dated March 14; to Gustave A. Thode, of Middlebranch, Neb.—In a rear axle for automobiles the inventor uses two axially aligned shafts united near the center of the axle by a compensating gear. Loosely mounted on one shaft is a bevel gear, rigid with the compensating gear, and on the same shaft, and facing the bevel gear, is a similar gear loosely mounted on the shaft. On the end of the drive shaft is a bevel gear that meshes with both of the gears on the axle shaft and which is balanced by an idler. On the shaft having the bevel gears are two collars, the outer one attached to the shaft, the other loosely mounted thereon, with connections between the two so as to vary the distance between them. On the adjacent sides of the collars are corresponding lugs and recesses so that the collars may be locked together tightly by bolts and nuts.



THODE'S REAR AXLE DESIGN

AUTOMOBILE DEVELOPMENT



THE MOLINE FOUR-CYLINDER LIGHT TOURING CAR

THE MOLINE TOURING CAR

The leader of the line of cars made by the Moline Automobile Co., of East Moline, Ill., is an 18-horsepower light touring car of approved lines.

The channel steel frame, made especially narrow and reinforced at the four corners by riveted plates, has the channel turned to the inside. At the rear two 44 by 1 3/4-inch elliptic scroll springs swung outside of the side pieces support the frame, and in front one semi-elliptic spring with its ends swung on the lower ends of shackles attached to the steering knuckles has at the center a one-point support, being clipped to the front cross piece of the frame. This spring has a length and width of 46 and 2 1/4 inches, respectively. Thirty-two-inch artillery wood wheels, regularly fitted with 3 1/2-inch Dunlop tires, run on Hyatt roller bearings.

The rear axle is of Weston-Mott construction and is contained within a 2 3/4-inch housing in which 1 3/8-inch solid drive shafts connect the Brown-Lipe differential with the road wheels. A two-inch seamless steel tubing, with a semi-circular drop in the center and Elliott steering knuckles on each end, serves as front axle. A nut and cotter pin hold the 3/4-inch pin which passes through the top and bottom of the yoke of the knuckles. The car has a 105-inch wheel base and 56 1/2-inch tread.

Four radius rods, with turn buckle adjustment, restrain the axles. The two from the front axle attach to the side pieces of the frame at a point 14 1/2 inches ahead of the attachment of the rear rods. It was only after continued testing that the company separated the attachment of the front and rear rods by this distance, giving as its reason for such determination of spread that either a greater or less distance increases the danger of buckling the frame side pieces.

Beneath the hood at the front of the car is the vertical, water-cooled, four-cylinder motor, with the cylinders cast in pairs and with the head, wall and water jackets cast integral. With a bore and stroke of 4 by 4 1/4 inches, respectively, the motor is rated at 18-horsepower when running at its normal speed. Because of the narrow main frame the motor has its four arms bolted directly to the side pieces, two bolts being used for each arm, one passing through the horizontal top part of the frame channel and the other through the vertical portion. These supporting arms are in-

tegral with the crank case, which supports the crank shaft bearings in its upper half, thus allowing the lower half of the case to be removed without interfering with the crank shaft or other parts of the motor. For retaining the lubricant beneath each connecting rod the lower half of the case is divided into four compartments by vertical bridges, high enough to provide a 1 3/4-inch oil level in each. In the bottom of each compartment a drain cock is placed for draining off oil, and in the center of the case is another drain cock which communicates with the four compartments and is so arranged that oil may be drained off when the level is over 1 3/4 inches.

The steel forged crank shaft, finished by grinding to correct size, has the throws at 180 degrees, with the center pairs set together. Each throw arm is 15-16-inch thick and 2 inches wide. The three shaft bearings are 1 1/2 inches in diameter; the two end ones 3 inches and the center one 2 3/8 inches long. Each crank pin bearing measures 1 3/4 inches in length and is of the same diameter as the shaft bearings, which are nickel babbitted.

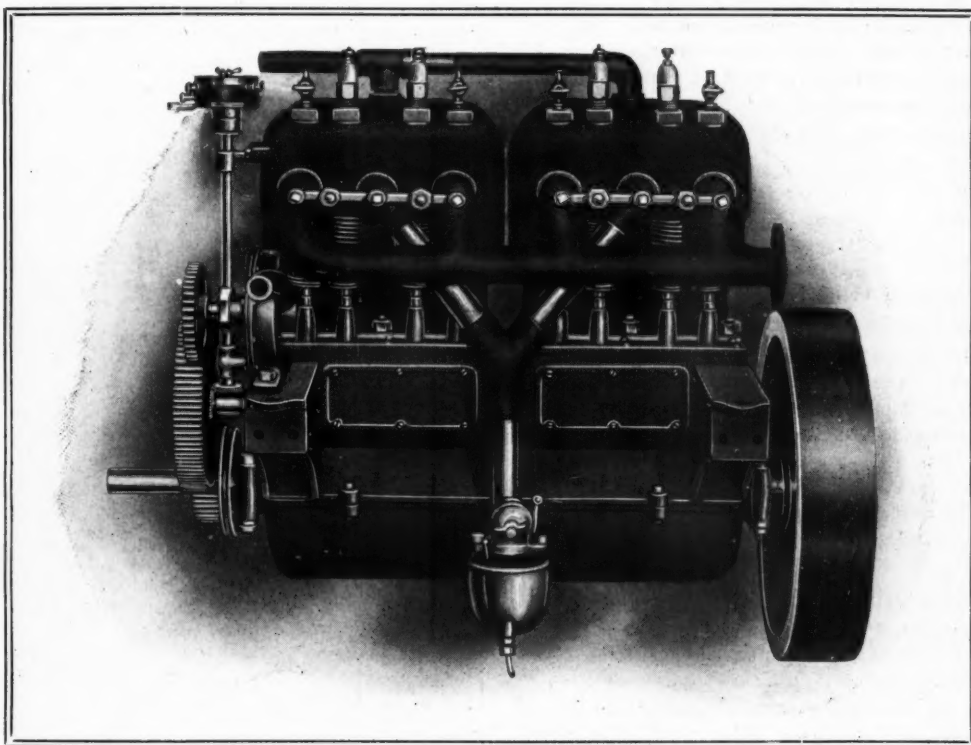
Each connecting rod, 10 1/2 inches from center

to center, is of heavy I section, with the center part 5-16 and the edges 7-16 inch thick. Nickel babbitt is used in the crank pin and bronze in the wrist pin bearings. Two 7-16-inch bolts secure the connecting rod cap to the rod, each being locked and pinned against loosening.

At the upper end of each piston three compression rings 5-16 inch wide are provided with tapered joints, but left free to rotate, and near the lower end are three oil grooves filled by the splash and which distribute oil over the piston walls. The 3/8-inch wrist pin is fastened to the piston by the bolt head tapering to spread at one end, and the nut tapering to spread at the other end.

Interchangeable mechanical inlet and exhaust valves, located on the right side of the motor, are actuated from one cam shaft placed in a separate compartment within the crank chamber. This shaft, with a bronze bearing at each end, has the cams pinned in place. The inlet valves being placed at the inside of each pair of cylinders are close together. The Moline people have made use of this feature by having a single pipe carry mixture to each pair and using a common chamber surrounding the two valves. The valves are 3/8 inches in diameter and lift 5-16 inch. These are made with the head and stem integral, the latter being left large immediately beneath the head to serve as a reinforcement. The stem is 3/8 inch in diameter, 7 1/2 inches long and at its lower end rests on the hardened end of the push rod. Near the lower end of the valve stem is inserted a retaining key on which is the washer-like valve spring seat which holds the valve spring tight. The retaining key is held in place by the lower surface of the valve spring seat being concaved, the ends of the key resting against the concave portions. On the crank case, beside each pair of cylinders, is screwed a bronze casting containing sleeves for the four push rods on its upper surface, while on its lower surface are guides to keep the rods from turning. On the lower end of the push rods are the usual rollers, bearing upon the cams.

The ground ends of the inlet and exhaust pipes are held in the coned cylinder openings



THE FOUR-CYLINDER MOLINE MOTOR



SHOWING THE CONVENIENCE OF THE DAYTON FOLDING SURREY SEAT

by a metal brace, held to the cylinders by two rods screwed into the cylinder castings and adjusted by nuts on their outer ends. In this brace are three set screws by means of which either of the two exhaust pipes or the one inlet pipe to each pair of cylinders may be tightened to any extent.

At the right center of the motor and on a level with the crank shaft bearings a new Schebler carbureter is connected through a single Y tubing with each pair of cylinders. Brass tubing $1\frac{1}{4}$ inches in diameter is used, the length from the carbureter being $9\frac{1}{2}$ and from the Y to each pair of cylinders $8\frac{1}{2}$ inches.

Ignition of the jump spark type is used, the current coming from six cells of Rock Island battery. The battery box on the running board of the car will contain four sets of six cells each. Connected with the battery is a quadruple coil on the dash. The Herz timer, placed on the top of a vertical shaft of the rear of the motor, is driven from the cam shaft by beveled gears and for manual regulation is connected with a lever on the steering column. Sta-Rite spark plugs screw into brass seats directly above the inlet valves, and to remove the valves the cap containing the plugs must be removed. On top of the motor are supports for the high tension wire so that the strain of support is taken off the plugs.

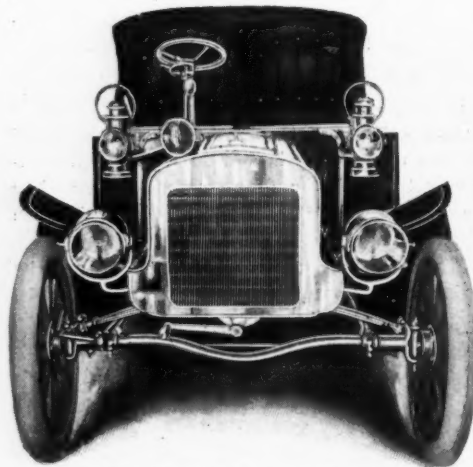
In the induction pipe, near the carbureter, is the usual valve for control of the mixture. It is coupled with a short lever on a quadrant on the rear side of the steering column, beneath the wheel. A forward movement gives an increased supply of mixture. On the front of the column is a similar quadrant, on which works the spark control lever, a forward movement of which gives an advanced spark.

Oil for motor lubrication is supplied by pressure feed from the crank case through an oiler of usual construction. Separate tubes lead to the end bearing of the crank shaft, the center bearing being supplied from a separate oil cup on the motor frame. All crank and wrist pin bearings are supplied from the splash. On the top of each connecting rod is a cup-like hole filled by the splash and from the bottom of it oil grooves lead angularly in the bronze bearing. On each crank pin are two cup-like cavities from which channels lead throughout the bearings. Within the cam shaft case an oil level is maintained from which the cam shaft bearings and the rollers on the end of the push rods are oiled.

The cooling arrangements include a combined tubular radiator and tank and a centrifugal pump, gear-driven from the cam shaft by external gears. The water circulation starts from the bottom of the tank, from which

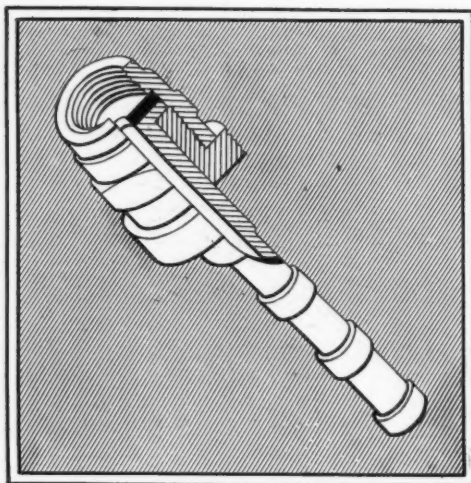
water is drawn by the pump, thence past the latter to the right side of each pair of cylinders. Where the water separates to go to each pair there is placed a Y elbow, forcing it to travel the same distance to each cylinder jacket. It exits from the top of each pair of cylinders and passes to the top of the tank on top of the radiator, and thence through the cooler.

From the motor power is transmitted through a two-speed and reverse planetary transmis-



THE MOLINE TOURING CAR

sion and by shaft final drive to the rear axle. The front end of the shaft carrying the transmission is flanged, as is the rear end of the crank shaft. These flanges are bolted together with the fly wheel between them. The transmission is placed in the car so that its axis is in line with that of the crank shaft. The rear end of the transmission shaft is carried in an aluminum housing supported on a channel steel cross member of the main frame. This housing also serves as a support for two



YOUSE AIR PUMP CONNECTION

arms of a cast steel yoke carried by the tubular casting that covers the propeller shaft. The universal joint between the arms of this yoke and the bearings are exactly in line with the center of the universal joint. The radius rods from the outer ends of the rear axle are carried by a bearing on the tubular third member at the rear of the yoke bearing. By this construction the radius rods hold the driving shaft in line perpendicularly to the rear axle, and the yoke takes the pull and thrust from the driving wheels.

The transmission gear case is made in one piece. Within it is an initial gear keyed to the transmission shaft, which meshes with the center gear in each of two triple sets of planetary gears. The case is built without internal gears. The case is dust and oil proof, all gears running in oil. To get the direct drive on the high speed the lever at the driver's right is moved forward, a high speed cone clutch then locking the entire gear case with the transmission shaft. For the slow speed ahead the lever is drawn back. In connection with this lever is a two-to-one gear which reduces the arc movement of the lever one-half. For the reverse the left pedal is brought into action.

On the hubs of the rear wheels are two internal expansion brakes actuated by a pedal at the right of the footboard and fitted with a ratchet to lock the brakes when set. Steering is by Brown-Lipe irreversible gear.

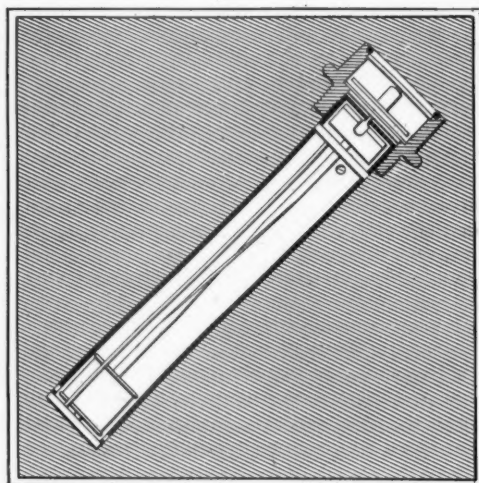
The body, which is of conventional design, has double side-entrance with individual front seats. Between the leather fenders runs a side board which carries against the rear fender the battery box answering for a step to the rear seats.

COMPOSITE ANTI-SKID TREAD

The Pullman "non-skid" has for its tread three circumferential rows of hobnail studs. Beneath the studs are metal plates for preventing the studs sinking into the solid leather tire tread, made of Kaspine leather, said not to be effected by the weather. Beneath this tread is a covering of chrome leather entirely encircling the tire, and inside of this is a leather lining, beneath which is an asbestos fabric used to keep heat generated at the shanks of the studs from being transmitted to the rubber lining of the casing or the inner tube.

MONSTER MACHINE TOOL

The Packard Motor Car Co., of Detroit, recently installed in its factory a special machine occupying 16 by 13 feet of floor space and which is used for machining the aluminum

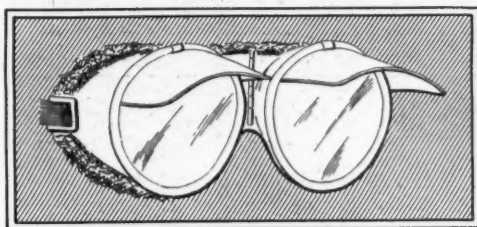


THE R. & C. FUEL INDICATOR

castings that house the transmission gear of the Packard car. The machine is one of the largest in use for working upon automobile castings. In it are three sets of tools that work simultaneously from as many different directions, and which are operated by two independent 10-horsepower electric motors. With this machine the entire job is accomplished by one setting of the casting. One apparent advantage of such a machine is that exact alignment of all parts of the casting can be secured. In one of the illustrations is shown a general view of the machine and in the other a more detailed view of its cutting tools.

SHADED GOGGLES

The Non-Strain goggles differ from others in having a projecting metallic shade over each glass, which serves the same role as an awning over a window. These shades prevent rays of light falling on the glass of the goggle and being reflected into the eye, and



THE NON-STRAIN GOGGLES

plug. The coil is enclosed in the body of the plug and all parts are insulated by mica, that in the inner end being specially heavy.

The magnet being enclosed will operate, it is claimed, in oil or water, and, it is further said, is not seriously affected by heat or soot. A 3-volt current will operate the plug.

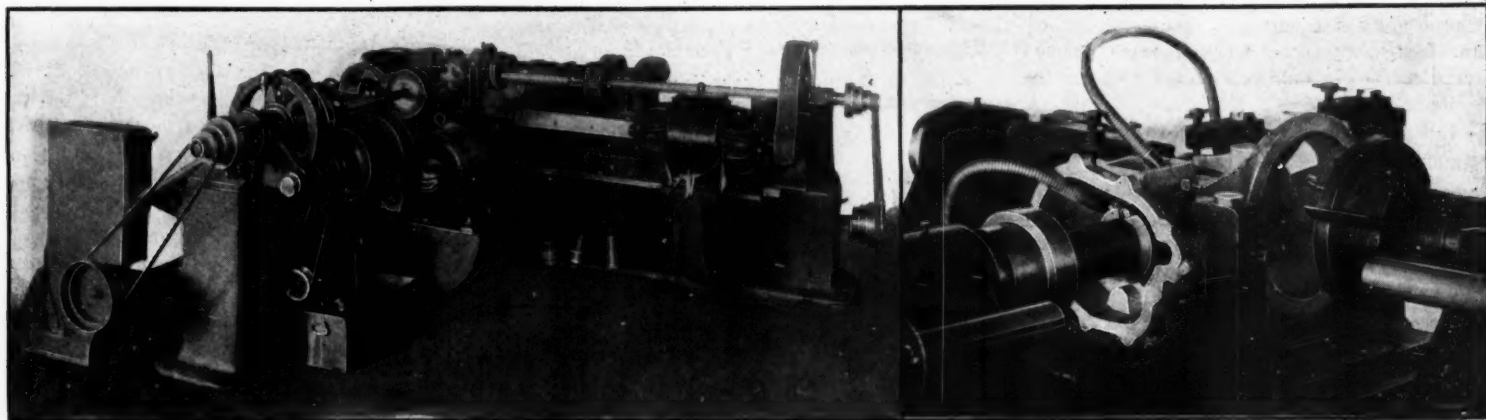
MAGNETIC FUEL INDICATOR

The R. & C. Indicator Co., of Bridgeport, Conn., is introducing an indicator for show-

the tank is a small float made to slide up along a rod and a central ribbon which is twisted. The ribbon is pivoted and carries on its upper end a small bar magnet. The position of the float is determined by the level of the fuel in the tank. If fuel is being added, as the level rises the float rises, and being held against rotation by the rod it forces the ribbon to revolve, the ribbon making one revolution while the float rises from the bottom to the top. Within the cap is a magnetized needle moved above a dial by the magnet as it revolves, thus showing on the graduated dial the amount of liquid in the tank.

FOLDING SURREY SEATS

A line of folding surrey seats to fit different makes of cars except those in which the motor is placed in the rear of the front seat, is manufactured by the Dayton Folding Tonneau Co., of Dayton, O. The seats are of usual construction, are finished in any color



MACHINE INSTALLED BY THE PACKARD MOTOR CAR CO. TO MACHINE TRANSMISSION GEAR CASES

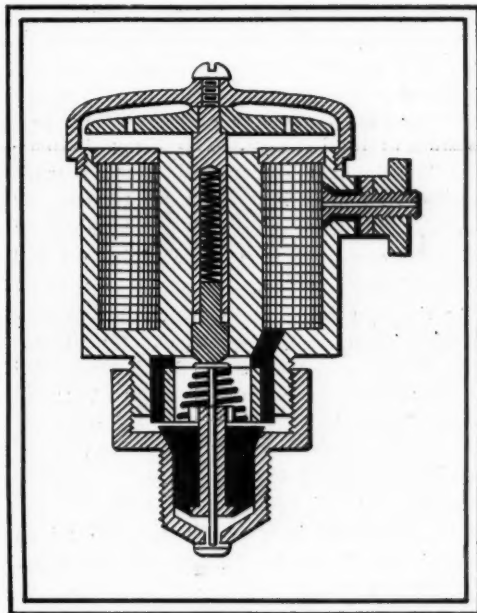


may be removed and placed in the pocket when not needed. The goggles are made with aluminum funnel-shaped eye cups, containing the glasses and set in an aluminum frame. The frame, where it rests against the head, is bound with silk chenille and is hinged to allow the goggles to be folded. Each eye cup is ventilated, and an elastic band with buckle serves to hold the goggles in place. These goggles are manufactured by the Ophthalmoscope Co., of Toledo.

MAKE-AND-BREAK SPARKER

Burton & Olive, of Los Angeles, Cal., are introducing the primary sparker illustrated herewith. It is an electro-magnetic make-and-break appliance, combining spark plug and coil in one. It consists of an enclosed magnet forming the barrel of the plug, one end of which is made to fit the usual spark plug opening in the cylinder. On the top is screwed a brass cap beneath which is a disk armature about 2½ inches in diameter and as thick as a 25-cent piece. Attached to the center of this disk is a slim plunger rod. This rod works up and down through the core of the magnet and strikes a blow on another plunger the lower end of which is one of the make-and-break points in the center of the cylinder end of the

ing the depth of fuel in a gasoline tank. It is inserted in the filling vent of the tank and the tube must be long enough to reach to the bottom. Within the tube which is placed in



THE BURTON & OLIVER SPARKER

desired and are upholstered with regular upholstery leather. They may be attached to the rear platform of the car, and when folded the rear of the car has a sloping curved deck. When open the seats are wide enough for two persons and are self-locking in position. They can be opened or closed quickly and are said to be noiseless both open and closed. When closed the sides fold beneath the back and sufficient space is left for wraps and other apparel. When these seats are made for the large cars they are both wider and higher than shown in the illustrations.

AIR PUMP CONNECTION

E. S. Youse, of Reading, Pa., markets an air coupling for connecting air pumps to the valves on automobile air tanks or automobile or carriage tires. This coupler, which is 1½ inches long, has all its parts turned from solid brass. The only change noticeable from the construction of a year ago is that the knurled lock for fastening the coupler to the valve is made from ⅝ instead of ¾-inch stock. A fiber washer is used with this lock. The coupler screws on the outside of the valves in the air tanks or tires. The end entering the tubing from the pump or compressor, contains three shoulders, thus making the attachment easy.

MANUFACTURING MISCELLANY



A SERPOLLET STEAMER ON THE WASTES OF NORTHWEST QUEENSLAND

Small One Grows—The Cook Motor Co., of Delaware, O., is enlarging its factory, which will soon occupy a building 32 by 100 feet.

Blue Grass Factory—There has been much talk lately in Lexington, Ky., that an automobile factory may soon be established there by capitalists of Cincinnati.

Increase in Jackson—A new factory 60 by 300 feet will be erected in Jackson, Mich., for the Jackson Engine & Motor Co., which recently increased its capital from \$30,000 to \$60,000.

Want Geneva Factory—It is reported from Geneva, O., that the Schneider Mfg. Co., and the Kloebe Gas Saving Appliance Co., both of Cleveland, are negotiating with the Geneva Automobile & Mfg. Co. for the purchase of its plant.

Diamond Hanger—The Diamond Rubber Co., of Akron, O., is distributing a hanger, which is a lithograph from an original water color by Maud Humphrey. The design is a couple of cherub-faced children driving a car through a Diamond automobile tire.

New Auto-Bi Company—The Thomas Auto-Bi Co., organized in Buffalo, N. Y., has bought the motor cycle business of the E. R. Thomas Motor Co., which previously made the Auto-Bi. Clarence Becker is the president of the new concern; Edwin L. Thomas, vice-president; C. W. Chadeayne, secretary and treasurer. It is the intention of the company to manufacture 1,000 motor cycles this year.

Hendee Branch On Coast—The Hendee Mfg. Co., of Springfield, Mass., manufacturer of the Indian motor cycle, has decided to handle the Pacific coast trade direct from its factory in Massachusetts, and for this reason the Brunette Co., of San Francisco, will no longer act as the coast agent for the Indian. C. C. Hopkins, who has handled Indian motor cycles during the last 2 years, has been made manager in San Francisco and will carry a large supply of parts for these machines.

Believes in Side Doors—Respecting certain doubts as to the entire practicability of side-door construction which have been voiced recently, President Budlong, of the Electric Vehicle Co., of Hartford, Conn., expresses himself as follows: "We know exactly what we are about. What we are now doing in the side door line is the result of 12 months' practical experience and our frames are built to withstand the strain indefinitely. You can't budge the frames of either the 40 or 18-horsepower Columbias by any sort of use

under any kind of a load. The increased side stresses are more than met by extra frame depth and ample re-enforcements, and this without making the cars too heavy."

Detroit Gets Another—The Western Automobile Machine Screw Co., of Elyria, O., has been purchased by the Standard Screw Co., of Detroit.

Solids in Demand—According to M. Carkuff, of the Firestone Tire & Rubber Co., of Akron, O., the outlook for solid tires has never been better. The company has nearly all the business it can handle.

Increase Casting Facilities—The Allyn Brass Foundry Co., of Cleveland, has almost completed a plant in Detroit, at Bellevue and the Belt railroad, almost as large as its Ohio plant, it being 155 by 80 feet. About April 15 it is expected that the factory will be ready for operation. The company makes aluminum castings for the White, Packard, Royal Tourist, Locomobile and other well known cars.

The Name of Knox—The Knox Automobile Co., of Springfield, Mass., was some time ago granted an injunction against the Knox Motor Truck Co., of the same city, restraining the latter from using the word Knox as a component part of its business name. The injunction further restrained the defendants, their employees, agents, servants, attorneys, counselors and others associated with the firm from, in any manner, making use of the word Knox in relation to the manufacture and sale of motor cars, commercial vehicles and motor trucks of any kind, or in advertisements, sign, placards or publications pertaining to its business. The Knox Automobile Co. through its counsel recently made motion that this injunction be temporarily modified allowing the defendant company using its corporate name in carrying on and advertising its business on condition that on all written, printed and typewritten matter, signs and advertisements of the words "Knox Motor Truck Co." be accompanied directly above or below by the words "Not Knox Automobile Co.," in letters equal in size to those used in the words "Knox Motor Truck Co.," except that the words "Not Knox Automobile Co." be not required in signing checks, business letters except those which are without letter heads, contracts or other instruments or documents to which the signature of the defendant company may be necessary, such conditions to remain until the

superior court decides upon the case. The plaintiff company suggested this modification so as to not interfere with the business of the defendant company at the Boston automobile show. The case is set for this week.

Lackawanna Progress—The Lackawanna Mfg. Co., recently incorporated, and located in Newburgh, N. Y., has taken over the plant of the Lackawanna Valveless Motor Co., of Buffalo, and will operate it until fall, when the business is to be removed to the new plant of the new concern, soon to be erected.

Much Fumigation—It took 24 hours for the board of health of Syracuse to fumigate the Franklin automobile factory last week, as there are 1,626,800 cubic feet of floor space on the five floors of the factory. It was feared that scarlet fever, with which some of the men were afflicted, would spread.

Purchase Federal Plant—The Diamond Chain and Mfg. Co., of Indianapolis, has been incorporated with a capital of \$300,000 in common stock, and \$100,000 in preferred stock, the incorporators being L. M. Wainwright, E. C. Dunmeyer, H. B. Hibben, C. E. Coffin and O. L. Jamison. The concern has purchased the Diamond chain factory of the Federal Mfg. Co.

Wants Good Mechanics—Good men are much in demand at the factory of the H. H. Franklin Mfg. Co., of Syracuse, N. Y., this company in order to secure more competent workmen is at present offering transportation to Syracuse, to high class machinists. The company has within the past few months added 600 men to the pay rolls and is still in need of more.

Swinehart in Europe—Robert Swinehart, of the Swinehart Clincher Tire Co., of Akron, O., recently returned from a 3-month trip abroad, having visited France, England and Germany in the interest of the Swinehart tires. He reports that commercial cars in those countries are ahead of ours, especially the automobile 'buses of London. Mr. Swinehart appointed several European agents for Swinehart tires and expects good business across the Atlantic.

Close to the Falls—Incorporated with a capital of \$25,000, the La Salle Niagara Auto Co. will manufacture at La Salle, N. Y., the Niagara car which for the last 6 years has been made at Wilson by the Wilson Automobile Co. La Salle is between Buffalo and Niagara Falls. Harry Highland and Clinton W. Johnson, of Niagara Falls, and John A. Reynolds, of La Salle, are directors of the company and C. W. Savage, formerly of Pittsburg, will have charge of the sales department. A large four-story factory at La Salle has been leased and the manufacture of cars will be begun at once.

Valuable to Tourists—The Hartford Rubber Works Co., of Hartford, Conn., is preparing a book called Automobile Good Roads and Tours. An advance copy of a section of the book has been completed and gives a good idea of what the complete edition will be. A map of Long Island is shown in the booklet and it gives the principal roads in that section of the country and those leading to New York city and to various localities in New Jersey and Connecticut. After general information about tours that can be made in Long Island and to other states, a list of hotels, dealers, repair shops in some of the principal towns and villages in eastern states principal towns in eastern states is given.

FROM THE FOUR WINDS



The New "400"—It is said that a new transportation company being organized in Paris intends to use 400 motor cabs in its passenger service.

The Veteran Renault—Joe Tracy is overhauling the veteran racing Renault for entry at the Commonwealth avenue hill climb in Boston, April 17, and the 5 days' straight-away tournament, which will begin at Lake-wood Tuesday, April 25.

Cadillac for Hotel Guests—A Cadillac bus has replaced the antiquated wagon which patrons of the Brockerhoff House, at Bellefonte, Pa., have been compelled to patronize when traveling to and fro between that caravansary and the railroad station.

Test Among Mountains—During the latter part of August a reliability trial for touring cars will be run in Southern France, the distance to be about 750 miles. Part of the route will be run in a mountainous section. Two newspapers are promoting the contest.

Chance for America—There are about a dozen automobiles in the Island of Malta, a British possession. Among them are several Mobile steamers, three Wolseleys and several French cars. A Frenchman who resides in the island says that the people want runabouts for two persons, capable of climbing grades of 12 to 15 per cent.

Motor Bus Cheaper—It is reported that the Detroit Omnibus Co., of Detroit, Mich., intends to substitute motor vehicles for its horse-drawn vehicles, having found that it would be more economical, besides saving much time. In a recent test a motor car accomplished in 50 minutes the work done in 2 hours by trucks and horses.

Want Split Roadways—The councilmen of a small village near the proposed course of the Bennett cup race, have recently adopted a resolution urging that the taxes on automobiles and motor cycles be trebled because they are becoming too numerous. They also suggest that all roads be divided with wires, one side to be for the use of the motorists and the other for horse-drawn vehicles.

Hill Climb in Africa—A hill climbing contest for touring cars was held near Alger, Africa, March 8, the distance being 6½ miles. Narbonne, on a 20-horsepower Pilain was the winner, covering the distance in 20:11. A 14-horsepower Renault was second in 20:31, and a Pilain was third in 20:52. The grade of the hill varies from 4 to 13 per cent.

Ownerless Watch—A. D. Proctor Smith, of New York, who has been piloting the Challenger in record trials in southern waters this winter, is back from Cuba. He is looking for the very generous or very absent-minded owner of a gold stop watch, who handed it to him when he started from the Lake Worth dock for his 2:04 mile run. The watch was never claimed and the identity of the donor

remains unknown to the present holder, despite persistent inquiry.

After Water Records—H. L. Bowden has taken the Mercedes engines from his mile record holder and is having them put in a motor boat for a try for the records on water.

Runabouts Carry Mail—Two mail carriers, Herman Blocker, of Traer, Ia., and Freas C. Hayman, of Santa Barbara, Cal., have purchased runabouts for the purpose of distributing Uncle Sam's mails.

Italian Events—The following events have been arranged to take place in Italy this year: Reliability trials for touring cars, May 15 to 18; annual hill climbing contest on Cenis mountain, during the first or second week in July; Florio cup race and other speed contests for motor cars and motor boat races on Lake Garde, September 8 to 10; annual meeting of Padua, September 11 to 17; Consuma cup race, September 24.

The Road of Roads—Julian Hawthorne, who is making the trip over el Camino Real, California, the first great road on this continent, in an automobile, says of the highway: "Of el Camino Real I would say that when it is made the state roadway, as it might be and must be, people will come here from the four corners of the earth for the pleasure of riding on it. For no other road in the world passes through scenery of such variety and beauty; no other is the connecting link between places of such human and antiquarian interest. It was the first great main road on this continent, and it was traversed, long before the Spanish padres were heard of, by the silent feet of the Indians, who chose their route by the infallible instinct which combines the line of least resistance with the shortest way home. It is a natural highway; engineers could not lay it out better; it adapts itself to the contours of the ground; it seems to lead you purposely to the most ravishing prospects and yet it brings you with the utmost expedition and facility to your journey's end. No motorist of the future will have won his spurs—or whatever may be the corresponding insignia of his cult—until he has made the journey over el Camino Real; and no patriotic American, or intelligent foreigner, will feel that he has done his duty until he knows what love-

liness and what history this road of roads affords him."

Disturbs Funeral—A chauffeur of Los Angeles, Cal., was fined \$30 for having driven his motor car into a carriage that was in a funeral cortege.

Boston Hill Climb—According to present plans the annual hill-climbing contest in Boston under the auspices of the Massachusetts Automobile Club, will take place April 19.

Twenty to Three—During the first 2 days of the English automobile show held at Olympia, London, nine Oldsmobiles were sold, but it is said that it took sixty demonstration runs to make these sales.

A. C. A. Lecture—Alexander Churchill lectured at the Automobile Club last Tuesday on the mercury arc rectifier, the latest system for transforming alternating current into direct current for charging storage batteries.

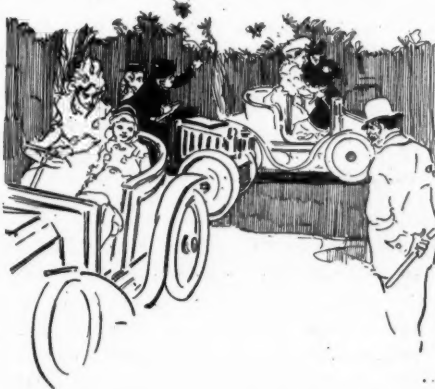
Along the Coast—The touring car of Mrs. Viola A. Follet, of Honolulu, left San Francisco this week for the beautiful coast trip to San Diego. The car will be driven on its long journey by Mrs. Mary Armstrong, daughter of Mrs. Follet.

Miller Loyal—Major C. J. S. Miller, of Franklin, Pa., and New York, though he bought W. Gould Brokaw's 40-horsepower Renault and hired Joe Tracy to drive it at the Cuban carnival in order that he might make an entrance into the racing game, has just shown his favor for the American product by the purchase of two Royal Tourists, one a limousine, the other an open car.

An Academy of Sports—L'Auto, a Paris daily sporting journal, recently held a voting contest among its readers for the selection of forty sportsmen of France to be known as the Sports Academy. Among the men selected are Emile Mors, Marquis de Dion, Marquis de Chasseloup-Loubat, Ernest Archdeacon, M. Brasier, G. Rives, H. Desgranges, Colonel Renard and M. Ballif, all of automobiling fame.

MacDonald O. K'd—A banquet was recently tendered by the London agents of the Napier company to Arthur MacDonald, the English driver who was prominent at the Ormond tournament with his six-cylinder Napier racer. S. F. Edge presided at the banquet and announced that the British manufacturers had already decided to send MacDonald to the Florida meeting in 1906 and that a more powerful car would be built for that purpose.

Fast Tire Work—One of the features at the recent London show at Olympia was a tire fitting competition promoted by the Continental Caoutchouc Co. The competitors had to take out the inner tube of a Continental tire, put another in its place and inflate the tire, making it again ready for use. The winner of the competition required 5 minutes 48½ seconds for the operation, almost 60 seconds less time than that of the winner of a similar competition held at the Berlin show.





Big Prize List—The total value of the cash prizes and cups which will be awarded during the automobile week of Brescia, Italy, is now \$20,000, with more to come.

Champion to Race—Albert Champion, the French motor cyclist and automobile driver, returned to the United States last week, after a visit to France. It is said that he intends to take part in the racing in the east this summer.

Try to Relight Pipes—Now that the Bennett-Grand Prix race tangle has been straightened out, the manufacturers of the Pipe car, which is made in Belgium, have advised the Automobile Club of Belgium that they would like to re-enter their cars for the cup race. It is not likely that their request will be granted as the Automobile Club of France has decided not to re-open the entry list.

New British Association—The British Empire Motor Trades Alliance is a new organization formed in London. Its object is to serve the general interests of the industry and to confer frequently with other trade organizations and with clubs to secure co-operative work. The membership to the organization will be limited to British manufacturers of vehicle motors, agents for such motors; manufacturers of motor cars, marine and agricultural motors, and agents for such cars and motors. Makers of parts for automobiles and marine and agricultural motors and owners

NEWLY FORMED

Westfield, Mass.—Hampden Automobile Co.; capital \$10,000; to deal in automobiles. Incorporators, Henry R. Barton, Dr. George H. Janes, Myron A. Gilman.

Providence, R. I.—Flint Motor Car Co.; capital \$30,000; to build, sell and repair automobiles. Incorporators, Elliott Flint, Franklin M. Cheney and Thomas P. Allen.

Brookline, Mass.—Tremont Garage Co.; capital \$10,000; to deal in motor cars. President and treasurer, Frank D. Stranahan.

St. Louis, Mo.—Automobile Exchange & Supply Co.; capital \$5,000, of which half has been paid in. Incorporators, A. L. Dyke, C. J. Dyke, and Charles Peters.

New York, N. Y.—Automobile Arcade; capital \$30,000. Incorporators, J. L. Scott, Louis Schwarz and E. C. Griffith.

New York, N. Y.—Lincoln Carriage and Automobile Co.; capital \$5,000. Incorporators, A. M. Lasser, L. Lasser and W. R. Ecker.

South Orange, N. J.—South Orange Motor Co.; capital \$100,000. Incorporators, Fred Ardrey, Clara Ardrey, Alick Merriman and Evelyn Merriman.

Boston, Mass.—Veerac Motor Car Co.; capital \$50,000; to deal in motor cars. Incorporators, C. F. Whitney, A. P. Delabarre and W. E. Decker.

Salt Lake City, Utah.—Nevada-Utah Auto Transportation Co.; capital stock \$25,000, divided into 25,000 shares of the par value of \$1; to carry passengers and merchandise. Incorporators, F. W. Vogler, H. A. McCormick, Charles S. and L. M. Wilkes.

Minneapolis, Minn.—Minneapolis Automobile Dealers' Association; capital stock \$1,000; to promote the interests of the automobile dealers of the city. Incorporators, F. H. Moulton, Jr., H. E. Pence and Theodore C. Jordan.

Atlantic City, N. J.—Auto Speedway Co. of America; capital \$100,000. Incorporators, Walter H. McDougall, Louis Kuenle and James O. Walsh.

Dallas, Tex.—Johnson-Schofield Auto Co.; capi-

of publications may become associate members of the new association.

Too Much Testing—Several automobile testers were recently fined in Detroit because they were caught driving their cars at a greater speed than the local ordinance permits.

Doctors Prefer Motors—In a single week three doctors living in the vicinity of San Francisco, Cal., became owners of automobiles and now their horses are for sale. A doctor without a motor will soon be passe here.

Standard Oil or Russia?—At a recent session of the Italian chamber, a deputy suggested that in order to assist the development of the automobile industry in that country, the customs duty on gasoline should be lowered. The secretary of state replied that the matter would be given prompt attention.

The Queen Incog—Queen Marguerita of Italy recently completed a fortnight automobile trip through northern Italy and part of France, covering about 1,600 miles. As she traveled incognito she met on several occasions with annoyances common to motorists. At the customs house, for instance, she was delayed a long time until all the petty formalities had been attended to and, it is



THE ST. LOUIS FIRE CHIEF IN HIS NEWLY ACQUIRED LOCOMOBILE SERVICE CAR

tal stock \$10,000. Incorporators, H. E. Johnson, George L. Schofield and Carrie L. Schofield.

Minneapolis, Minn.—Twin City Motor Livery Co.; capital \$10,000. Incorporators, H. G. Goosman, E. G. Choate and Byron G. Baker.

Nashville, Tenn.—Southern Automobile Co.; capital stock \$10,000; to handle automobiles and accessories. Incorporators, John T. Landis, Lulan Landis, J. Roy Boone, J. W. Bell and B. F. Bell.

Jackson, Mich.—The Jackson Engine & Motor Co. has changed its name to the Field-Brundage Co. and increased its capital from \$30,000 to \$60,000.

Trenton, N. J.—Motor Car Specialty Co.; capital \$70,000; to manufacture specialties for automobiles. Incorporators, George E. Dunn, John O. Hart and Edward S. Lea.

Kittery, Me.—Lowell Automobile Corporation; capital \$10,000. Incorporators, Jesse E. Forsythe, O. S. Paul and Ernest L. Chaney.

Summit, N. J.—Summit Motor Car Co.; capital \$5,000; to build motors. Incorporators, Cyril C. Smith, John C. Chrystal, Martha A. Chrystal, E. L. McKiernan.

Milwaukee, Wis.—Western Auto Supply Co. has increased its capital from \$25,000 to \$40,000.

Syracuse, N. Y.—Compound Automobile Co.; capital \$1,000; to deal in motor cars. Incorporators, R. E. Wight, W. P. Hitchcock and E. J. Page.

Taunton, Mass.—Carlow Automobile Co.; capital \$9,000; to deal in motor cars and accessories. Incorporators, Frederick A. Shaw and Henry Carlow.

said, she remarked that if the officials are as conscientious with every case as in hers it would be a difficult matter to smuggle.

First American Mercedes—General C. M. Spitzer, of Toledo, has placed an order for the first American Mercedes touring car. The car is to have a seating capacity of seven persons.

Cars for Scrapping—Members of the Touring Club of Italy, of the Automobile Club of Italy, and of other organizations, recently decided to organize an Italian automobile and bicycle volunteer corps. The minister of war is taking great interest in the matter.

To Test Tourists—April 14 and 15 have been selected for a touring car competition near Nice, France. On the first day there will be a reliability trial over a circuit of about 100 miles, while on the second day there will be a hill climbing contest, brake tests, and other events.

Steamers for Asia—The chief physician of the Pasteur Institute of Nha Than, Tonkin, Asia, recently sent an order to Leon Serpollet, the French steam car builder, for several of his cars and a motor boat to be equipped with a Serpollet engine. The doctor says that steam cars are the only kind of automobiles which can now be used to advantage in that part of Asia.

'Lid Off' in Roumania—A Frenchman writes to a fellow countryman that Roumania is a paradise for the automobilists. He says fuel costs only \$7.40 per 220 pounds; good drivers and mechanics are to be had at \$14 to \$18 per month; there exists no licensing or numbering ordinances and no law requiring cars to be provided with lamps; there are no gendarmes, and, above all, there is either no speed limit or it is never observed.

CORPORATIONS

Newburg, N. Y.—Lackawanna Mfg. Co.; capital \$20,000; to build motors and engines. Incorporators, A. W. Mapes and W. H. and T. Caldwell.

West Hampton Beach, N. Y.—Long Island Automobile Observation Co.; capital \$100,000; to carry passengers and merchandise from Jamaica, L. I., to Amagansett, L. I., a distance of 100 miles. Directors, Gustave H. Liedtke, George L. Robinson, George M. Auten, William H. Slattery and M. B. Lake.

Boston, Mass.—Boston Association of Licensed Automobile Dealers, Inc.; capital \$5,000; to deal in automobiles. President, William M. Burke; treasurer, John H. McAlman; clerk, Jewell A. Dowling.

Cleveland, O.—The T. C. Whitcomb Automobile Co.; capital \$10,000. Incorporators, T. C. Whitcomb, M. G. Roseboro, W. S. Kerruish, S. Q. Kerruish and J. P. Macbeth.

Chicago, Ill.—Chicago Commercial Auto Mfg. Co.; capital \$10,000; to make machinery for automobiles. Incorporators, L. W. Parker, H. M. Hagan and C. N. Kefer.

Paterson, N. J.—Paterson Automobile Co., capital \$10,000. Incorporators George M. Rusling, E. DeWitt Carrough and H. L. Ramlen.

Detroit, Mich.—Peninsular Machine Co., capital \$5,000; to manufacture automobile parts. Incorporators John A. Etzold, John E. White and Otto F. Barthel.

Camden, N. J.—Adams Storage Battery Co., capital \$4,000,000. Incorporators Henry F. Stockwell, Joseph Tyler and E. G. C. Blakeby.



GARAGE

Why Not?—Fred Myers & Son are agents for the Cadillac in Redfield, S. D.

Napier in New York—The Napier Motor Car Co. has established New York headquarters at Fiftieth street and Broadway.

Popes in Springfield—The Pope-Toledo cars will be handled this year in Springfield, Mass., by the Giesel Automobile Co., recently organized.

Electrics for McDuffee—The McDuffee Automobile Co., of Chicago, has taken the agency for Buffalo electrics. All models will be sold but only the stanhope carried in stock.

Michigan in Missouri—The Michigan Automobile Co., Ltd., of Kalamazoo, Mich., has established a branch at 1319 and 1321 East Fifteenth street, Kansas City, Mo., under the management of H. D. Clark, Jr.

A Roycroft?—The Motor Shop is a newcomer in Philadelphia, Pa., and has its headquarters at 317-319 North Broad street. The Royal Tourist will be handled and possibly another but less expensive car.

Dayton Enlargement—The Central Automobile & Repair Co., of Dayton, O., has moved into a large three-story building on Ludlaw street. The company handles the Elmore, Haynes-Appersoon and Rainier electric trucks.

Peerless in Jersey—Belden & Coburn, 577 Central avenue, Newark, N. J., who are about to start in the automobile business, have practically completed their garage, and will open the latter part of this week. They will handle the Peerless.

Two-Story Brick—A new garage will soon be completed in West Chester, Pa. It will be a two-story brick building 186 by 25 feet, and will be equipped with everything necessary to make it an up-to-date automobile station and repair shop. J. Max Meyer, Jr., is the owner.

Poppenberg Pop-Over—The Poppenberg Co., of Buffalo, has taken possession of the store adjoining its old store and is making necessary changes before opening its new motor car salesroom. At the same time work is being rushed on a large new garage at the rear of the store.

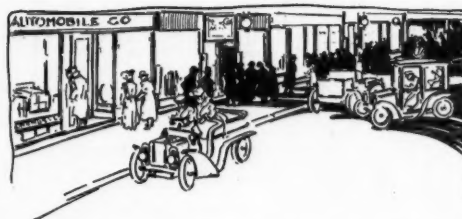
Among Peaches—The South Haven Automobile Co. was recently organized in South Haven, Mich., by W. F. Merrill and Irving Cowles. Headquarters has been taken in Merrill's music store on Phoenix street. The Franklin and Oldsmobile will be handled by the company, besides accessories and parts.

Pipes for Southerners—Joseph S. Heller, of New York, who controls the selling rights of the Pipe cars for Central America, the United States and the West Indies, will visit Mexico and Cuba this month to establish agencies. He proposes to introduce Pipe passenger buses and motor trucks in the United States.

Wintons in the West—The Chicago branch of the Winton Motor Carriage Co., under the management of H. L. Owsney, is at last well supplied with Model C cars. The branch has some twenty-five sub-agencies, nearly all of which are now supplied with demonstrating machines of this model. Within a few weeks Model B cars will be on hand in most of them.

Reos Show Up—The handicap which the Philadelphia branch of the Reo Motor Car Co. has been laboring under—no cars for demonstration and exhibition purposes—has been removed and business is in full swing. The quarters in the Mint Arcade, opposite the city hall, being designed for a salesroom only, a warehouse has been secured at 1235 Hamilton street, where stock cars will be stored and a repair plant installed.

La Roche Business Continued—The directors of the American Darracq Automobile Co., and the F. A. La Roche Co., its selling agent, will continue the business of both in the same lines as before the death of Mr. La Roche. G. M. McWilliams is now in charge of the business office, while R. K. Harris, who had charge of the Darracq exhibit at St. Louis, will be the head of the New York retail establishment. The Philadelphia branch will be continued and also the agencies in Chicago, Boston, Washington and other large cities. The company has on hand an ample stock of cars for prompt de-



livery and has arranged to keep it up by weekly shipments.

New Cadillacs—The Cadillac will be handled by Frank Edner in Wadena, Minn., and in Littleton, N. H., by G. W. Smith.

First Berliet Arrives—The first Berliet car to be imported into this country has been received by Mendel, Dale & Co., of New York, its American agents.

Two "Outsiders"—Premier and Ford cars will be handled in Utica, N. Y., by the Utica Motor Co., which was recently organized and which has its salesroom at 128 Lafayette street.

Aster on Broadway—The Aster Co., formerly of 307 West Forty-fourth street, New York, agent for the Aster motors, has removed to 1556 Broadway. A. J. Meyers is manager of the concern.

Wishes Well Advertised Ones—The Irvin W. Dill Carriage and Automobile Works, of Harrisburg, Pa., intends to secure the agency for several well known cars not yet handled in the Pennsylvania town.

Two for Henshaw—C. S. Henshaw, the New England representative of the E. R. Thomas Motor Co., of Buffalo, has opened a second store in Boston, at 286 Columbus avenue, next to the other salesroom. The new place will be in charge of R. D. Henshaw.

Weber Gets "Trucks"—Motor trucks ranging in carrying capacity from 1 to 5 tons and manufactured by the Knox Motor Truck Co., of Springfield, Mass., will be handled in Chicago by the Orlando F. Weber Co. The different models are expected the first of May.

Miller-Mundy in New Home—The Miller-Mundy Motor Car Co. is now established in its new quarters at 28 John street, Utica, N. Y., and has a complete garage and repair shop. It is agent for the Autocar, Winton, Pope-Toledo, Pope-Waverley, Cadillac and Pierce cars. A full line of supplies is also carried.

In Old Cyclists' Club—H. M. Kennedy, proprietor of the Outing garage, at the Willick avenue entrance of Prospect Park, Brooklyn, has leased the Kings County Wheelmen's clubhouse on Grant square, and is fitting it up as a garage and headquarters for the Ford. It will be known as the Union League Garage, by reason of its adjoining the club of that name.

Well Filled Quiver—Dowling & McGuire, Boston agents of the George N. Pierce Co., of Buffalo, have found that the performances of the Great Arrow in the Mount Washington hill climb last year and in the White Mountain endurance run brought a lot of business. They ordered fifty Great Arrows early in the season, and last week placed an order for twenty-five more.

All in a Bunch—The B. F. Goodrich Co.'s Buffalo branch has moved to 731 Main street from West Huron street. There are also in the Rich building, in which the Goodrich company is located, the Diamond Rubber Co.'s store, the White Sewing Machine Co.'s Buffalo branch, the Buffalo branch of the Knox Automobile Co. and the National Battery Co. A short distance south on Main street are the Hartford Rubber Work & Co.'s Buffalo store and the establishment of the Poppenberg Automobile Co.; while just north of the Rich building is the garage of J. A. Cramer, and across the street the new garage and offices of the George N. Pierce Co. Farther north are the W. C. Jaynes Co. and the Fisk Rubber Co., while in the very center of the district is the Teck theater building in which are the new clubrooms of the Automobile Club of Buffalo. The concentration of automobile stores in one section and the advent of the local club into the heart of that district is considered on all sides to be an excellent development. Especially are the automobile men pleased with the changes in location of the tire stores and the remarkable increase of

GOSSIP

equipment installed by the tire branches this year.

Upton in Metropolis—Mendel & Dale, of New York, have taken the agency for the Upton car, made by the Upton Motor Co., of Lebanon, Pa.

Follow the Flag—G. & J. Ray, of Niagara Falls, who sold the Rambler last season, have disposed of that agency and will handle the Pope-Tribune this year.

New Holmes Garage—A new garage is being erected on West Third street, Williamsport, Pa., by Frank C. Holmes. It will be a two-story building, 50 by 100 feet, and will accommodate fifty cars.

Want an Agent?—A two-story fire-proof garage is being erected in Clearfield, Pa., by the Harder Gun Works. A repair shop will be fitted up and the agency for several cars may be secured by the concern.

Harrisburg and York—The Kline Cycle & Auto Co., 12 North Market square, Harrisburg, Pa., handles the Franklin, Oldsmobile and Yale, besides dealing extensively in accessories. The company has a branch in York, Pa.

Swell One in Delaware—The new garage and repair shop of the Delaware Auto Storage & Repair Co., of Wilmington, Del., was opened last week and is considered among the finest in the state. The company handles the Columbia, Cadillac, Orient and Locomobile.

In a Music Shop—In conjunction with their Philadelphia salesrooms on North Broad street, Thomas B. Jeffery & Co. have leased an old piano factory at Twenty-seventh and Thompson streets, where, in addition to storing stock cars, a well fitted-up repair shop, equipped with a full complement of machinery and parts, has been established.

Flyers at a Premium—Faxon, the Buffalo agent for the Thomas Flyer, following the example of Houpt, the New York representative of the company, is offering premiums to other agents for a part of their allotments. Faxon booked twenty orders at the Buffalo show, which put him still further behind in promised deliveries and forced him to look outside for cars.

Adams Chicago Branch—The Adams Co., of Dubuque, Ia., has opened a salesroom at 1536 Michigan avenue, Chicago, under the management of George E. Pickup. The 20-25-horsepower convertible brougham, and a 25-horsepower roadster are two of the leading models carried. A semi-racer of the latter class, and to be known as the Blue Streak, is expected in a few days.

Hot After Cars—Spring weather descended on Philadelphia so suddenly as to cause a sudden boom in the automobile trade and a consequent "keeping the wires hot" between agents and builders in the efforts of the former to make deliveries. The dealers with plenty of cars on hand are reaping a harvest, while walls of "can't get the cars" are frequent among those less fortunate.

Cover the County—The Hampden Automobile Co. has been organized in Westfield, Mass., and has incorporated with a capital of \$10,000. A branch will be opened at 8 Willow street, Springfield, Mass., and others may be opened in still other towns. The company has the agency in Hampden county for the Pope-Hartford and Pope-Tribune and the city agency for the Pope-Waverley.

Garage at Home—The Electric Vehicle Co., of Hartford, Conn., manufacturer of Columbia gasoline and electric cars, has opened a downtown salesroom at 372 Asylum street, Hartford, one block from the Union station. This step was taken in order to take better care of the Hartford customers of the company. G. E. Risley and F. E. Dayton, of the sales department, have charge of the new quarters.

Two More Converted—Two of the latest of the erstwhile cycle tradesmen of Philadelphia to break into the automobile game are W. R. Darrah, who used to handle the Barnes White Flyer, and Joe Vernier, who acted in a similar capacity for the Roman and incidentally did middle-distance stunts in the old human-pace days. The former is selling Ramblers, while the latter is laying plans to race on the track.

AMERICAN MOTOR LEAGUE

OFFICERS

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Potter Building, New York.
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W. GRANT MURRAY, Second Vice-Pres.,
Adrian, Mich.
S. W. MERRIHEW, Third Vice-Pres.,
154 Nassau St., New York.
FRANK A. EGAN, Secretary,
132 Nassau St., New York.
FREDERICK B. HILL, Treasurer,
32 Binford St., Boston.

National Headquarters
Vanderbilt Building New York



THIS LEAGUE

Is Now Collecting Route Information

covering all automobile routes in the important states and will publish road books for motor car users as fast as complete information is received. The A. M. L. is the only organization engaged in this work, and it invites the co-operation of all persons interested. For full information and membership blanks address American Motor League, Vanderbilt Building, New York City.

APPOINTMENTS

The following named members have been appointed to serve on the road book committees of their several states. These committees will be further enlarged by appointments from time to time:

NEW JERSEY COMMITTEE—George A. Oaks, Bloomfield; William S. Rendell, Mt. Holly; Edward D. Page, Oakland.

CONNECTICUT COMMITTEE.—Dr. Dow R. Beebe, Bridgeport; H. H. De Lass, Bridgeport.

OHIO COMMITTEE—Charles R. Bowers, Bryan; Dr. C. B. Reid, Van Wert; Lawrence E. Roby, Plain City; S. W. Miller, Columbus; B. H. Hogan, Youngstown; F. M. Wilson, Selma; H. C. Rogers, Mechanicsburg.

IOWA COMMITTEE—A. N. Drummond, Guernsey; Chris. Haffner, Donnellson; F. L. Butzloff, Charlotte; Dr. G. H. Mammer, Le Mars; George Henderson, Cedar Rapids; Harry E. Aldrich, Creston; W. R. Lewis, Montezuma; C. L. Trenery, Le Mars.

PENNSYLVANIA COMMITTEE—Dr. John A. Hawkins, Pittsburg; Reade W. Bailey, Pittsburg; Paul C. Wolff, Pittsburg; J. R. Whittemore, Erie; J. B. Arbuckle, Erie.

MASSACHUSETTS COMMITTEE—Otis T. Pettee, Newton Upper Falls; C. M. Houghton, Amherst; E. F. Batcheller, Lynn.

NEW YORK COMMITTEE—Charles H. Anthony, Gouverneur; Albert Gould Davis, Schenectady; R. V. Tompkins, Mechanicsville.

MINNESOTA COMMITTEE—John E. Dobbins, Fairbault.

MICHIGAN COMMITTEE—W. M. Perrett, Detroit; W. C. Orrell, Flint.

ILLINOIS COMMITTEE—D. Winton Dunn, Du Quoin.

CANADIAN COMMITTEE—Louis N. Patenaude, Montreal.

NORTH DAKOTA COMMITTEE—W. L. Wilder, Grand Forks.

ROUTE DESCRIPTIONS RECEIVED

From Mr. Bowersox of the Ohio committee the secretary has received complete notes and "running directions" covering the following routes: Bryan to Edgerton; Edgerton to Butler and Waterloo, Ind.; Bryan to Ney, Brunersburg and Defiance; Bryan to Sherwood, Cecil and Paulding; Bryan to Wauseon and Toledo. Mr. Bowersox sends also route descriptions prepared by J. H. Laughlin—Paulding to Van Wert, 20 miles—and by C. F. Price—Paulding to Defiance, 22½ miles.

Mr. Batcheller of the Massachusetts committee sends an excellent road map of Essex county, showing all the main roads, and a map of Lynn, showing all the streets.

Mr. Patenaude of the Canadian committee, contributes an elaborate detail map showing roads in the most populous portions of the province of Quebec; also a descriptive handbook relating to the same territory.

Messrs. Bailey and Wolff of the Pennsylvania committee are preparing a map showing the best roads and streets in Allegheny county.

Dr. Reil of Van Wert, O., sends two county maps on which the best roads have been carefully indicated by heavy colored lines—a clear and satisfactory exhibit.

For the New York road book the secretary has received revised route descriptions from Albany to Poughkeepsie; Albany to Saratoga Springs and Lake George; Troy to Fort Edward; Kingston to Oneonta and Albany to Pittsfield.

Miscellaneous notes have also been received covering routes in Connecticut, Massachusetts, Indiana, Pennsylvania, Maryland, Illinois, New Jersey, Ohio, Iowa and Missouri. These have been acknowledged by letters to the several contributors.

VOLUNTEERS WANTED

The magnitude of this work of preparing routes is more apparent as the interest increases. It is impossible for one at a distance to understand what it means to take the various memoranda, notes and maps sent from all parts of the country; examine, check, arrange and classify them so that all will harmonize, and finally put all parts together so that the data will unite into one complete result.

Correctness is the first essential. Notes should not be made from mere recollection, nor should a route be described from retrospect. Errors lead to all sorts of trouble, induce much dissatisfaction and grumbling and in the end the labor and expense of correcting each troublesome error must be borne. Of course, mistakes will creep in, but a little extra care at the outset will save double trouble at the end. The league wants volunteers who will lend a hand in making these road books—good men, clear headed, willing, enthusiastic, strenuous hustlers, who will do a share of this great work and help to produce results that will be a credit to the organization. A little while ago a Chicago editor, in

writing of the A. M. L., said this: "The fruits of the league are not to be picked from a fairy tree and handed out by a few to the many, as an inducement for them to come and get under the shade. The league makes its own way, paves its own road, and the width of the road and the character of the paving depend entirely upon the individual effort of the individuals composing it."

Let the reader—whether he is a league member or not—write to the secretary saying, "I am with you in this work of getting out maps and road books; I believe it is a great and useful purpose and one that should command the sympathy of every automobilist in this country; send me printed matter and route-slips and I will do what I can to assist the league in this enterprise." Such a letter will bring a prompt answer.

MEMBERSHIP BLANKS

A new form of application for membership has been devised and a lot of 50,000 will be received from the printer this week. A little while ago a member wrote to the secretary: "I feel rather flat when I take a \$2 membership fee from a man who is half a stranger, without giving him any return except the assurance that he will receive his membership card 'before long.' " No need of that "flat" feeling hereafter. With each membership blank sent to a consul or other member there will be found a printed voucher or receipt which is to be filled out, signed by the member who receives the money and handed to the applicant. This completes a clear cut transaction in correct business fashion and leaves everybody in a tranquil frame of mind. Now, not forgetting the 50,000 blanks mentioned above, the secretary is ready to send them out to all who are anxious to build up the league, and will mail to the reader any reasonable number on receipt of postal card request.

MEMBERSHIP CARDS

New membership cards are now being mailed. If an error is found in the spelling of a name or address the secretary will esteem it a privilege to make the correction. The names of members and places of residence, as written on the cards, are carefully compared with the official entries at headquarters, so that an error in the card means a similar error in the books. Cards defective in any particular should be returned with a brief line of explanation. Correction will then be made and a new card sent to the member. The records at headquarters will be corrected at the same time to correspond.

WINTON



NOT LIKE ANY OTHER CAR

The Winton of 1905 differs from other cars. It has many exclusive merits.

- (1) All motor and transmission parts can be removed and returned simply by disconnecting detachable half of case. Note that no other manufacturer even claims accessibility.
- (2) Positive Lubrication in exact proportion to motor speed. Because oiler is geared to motor. No chance, or splash, or guesswork oiling. No springs, pressure, or needle valves. Absolutely automatic and reliable.
- (3) Twin-Springs that adjust themselves to light or heavy loads on good or bad roads. Save tire wear. Lengthen life of motor. Make riding delightful.
- (4) Air Control permits any speed from four to sixty miles an hour without shifting gears or touching a lever.
- (5) Ignition by gear-driven Magneto and one non-vibrating coil. Dry cell battery for starting. No storage batteries. No trouble-making multiple, vibrating coil. A sure, fat spark at the right instant every time.
- (6) Steering Gear (screw and nut design) cannot wear unevenly. No danger of "ditching" car and passengers as when other gear is used.
- (7) Simplicity. One pedal and two levers operate all gears and brakes. A youth can learn operation in an hour. No danger of forgetting what to do in emergencies.
- (8) Quality highest. Price lowest, quality considered.

Five Models. All with four-cylinder vertical motors. Three side entrance cars—C, 16-20 H.P., \$1800; B, 24-30 H.P., \$2500; A, 40-50 H.P., \$3500. Two Limousine cars—24-30 H.P., \$3500; 40-50 H.P., \$4500.

All models illustrated and described in Catalog No. 2, which we will send you upon request.

THE WINTON MOTOR CARRIAGE CO.
CLEVELAND, MEMBERS A. L. A. M. OHIO, U. S. A.

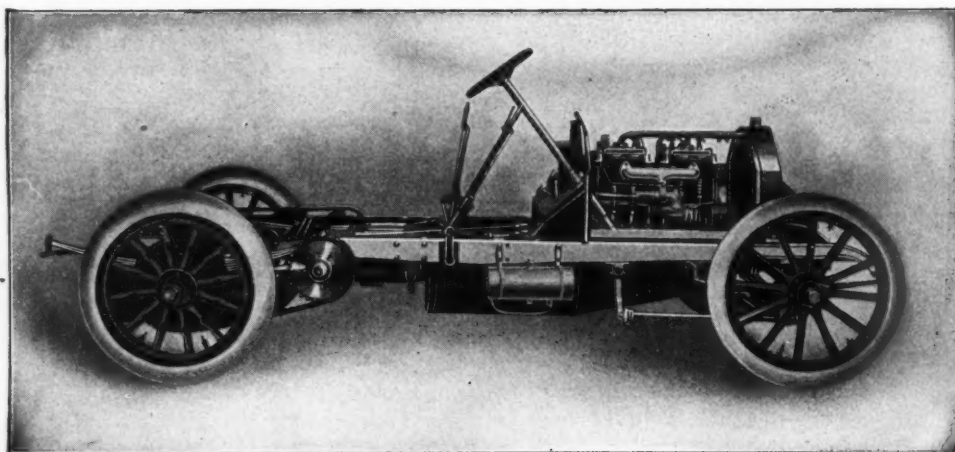
Branches in Chicago, New York, Boston, Philadelphia
 and London. Sales Agencies Everywhere

NOTICE.

The services of Chas. H. Tucker, as Chicago Branch Manager, have been discontinued. Our Chicago branch, at Michigan Avenue and Thirteenth Street, will henceforth be conducted under different management.

The Winton Motor Carriage Co.

FIAT



1905 Model Fiat Chassis
NOW ON EXHIBITION AT OUR GARAGE

"The Aristocrat of Auto Cars"

NEW CATALOGUE FREE

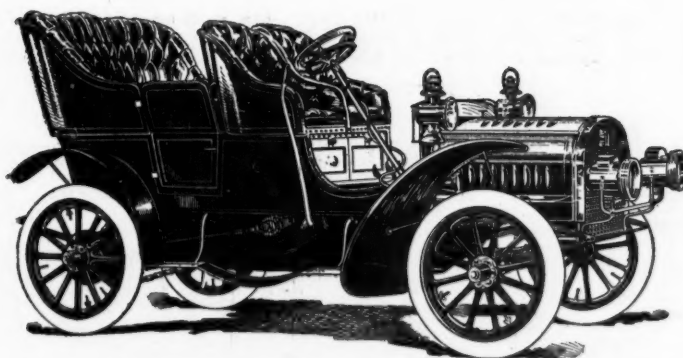
HOLLANDER & TANGEMAN

3 and 5 West 45th Street, New York

Sole American Agents

Licensed Importers under Selden Patent

Rambler



SURREY, TYPE ONE, 18 h. p., \$1350

Immediate delivery. Complete with brass side, tail and two gas head-lights with separate generator, brass horn, drop forged wrenches, oilers, pump and repair kit.

Other Models \$750, \$850, \$2000 and \$3000

THE low cost of maintenance is one of its most attractive features. No automobile has fewer and simpler working parts. So few and so simple are these parts that they may be seen and understood in a moment. The long, heavy, pressed steel frame, the rigid cross members supporting the engine, the perfectly balanced reciprocating parts, the full elliptic springs, large tires, non-friction metal and ball and roller bearings reduce wear and tear to the minimum.

With the elimination of unnecessary parts and a direct transmission of power, fuel is economized without a sacrifice of ability to go at comfortable speed wherever roads are fit for travel.

Disorders are so infrequent, and so easily repaired when they occur, that one may dispense with the help of a chauffeur. It is a machine that women can and do handle and care for themselves. We can point out instances.

Branches { BOSTON, 145 Columbus Avenue
CHICAGO, 302-304 Wabash Avenue
PHILADELPHIA, 242 North Broad Street

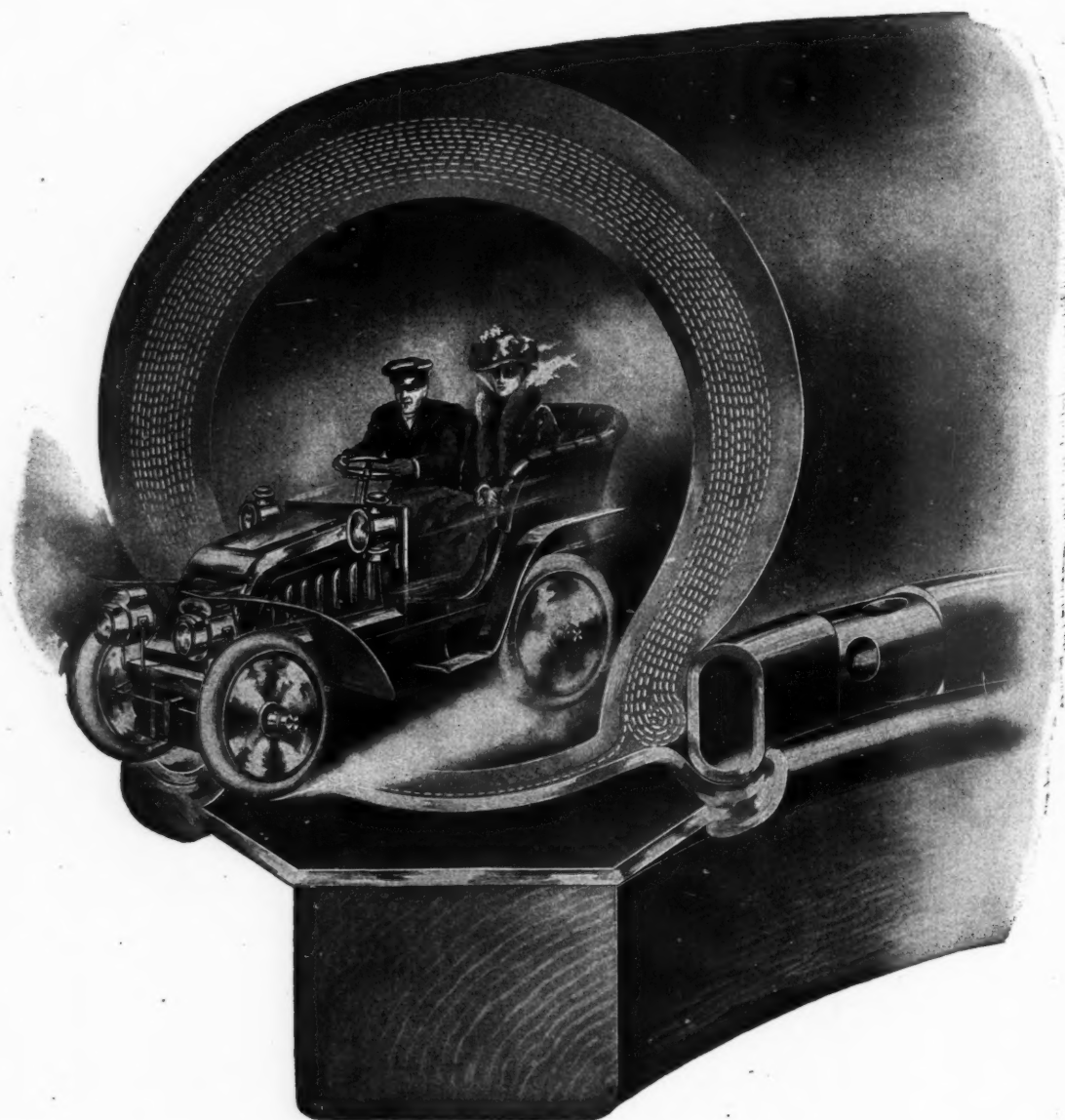
NEW YORK AGENCY, 134 West Thirty-eighth Street

Main Office and Factory: - - - - - KENOSHA, WISCONSIN

THOMAS B. JEFFERY & COMPANY

WHY THE Perfected Dunlop Detachable Tire IS THE MOST DURABLE

It's the only Automobile Tire that can be and is completely steam cured



The DUNLOP began where mechanically fastened tires have left off.....The only Automobile Tire that does not require lugs or other mechanical fastening.

Factories Nos. 1 and 2
HARTFORD, CONN.

THE HARTFORD RUBBER WORKS CO.

Factory No. 3
NEW BRUNSWICK, N. J.

BRANCH HOUSES—Boston
Minneapolis

New York (2)
Denver

Philadelphia
St. Louis

Buffalo
San Francisco

Cleveland
Detroit

Chicago
Los Angeles

The Gossip of the Trade

Concerning the New Orient Trade Mark:

Thirty new agents this month already, is not a bad record.

* * *

We booked one day last week orders for forty-one cars.

* * *

16-horsepower cars are nearly holding their own in orders booked, with 20-horsepower cars. One reason seems to be that in no other car of this horsepower or less, can you find these popular and actual trade-bringing features:

Positive air-cooling, 3 forward speeds, direct drive, sliding gear transmission, 4 cylinders tandem, running lengthwise of the cars.

* * *

Nearly everybody knows that the cylinders should be placed lengthwise of the car, so as to take advantage of the direct drive, and avoid the long chain drive.

* * *

Is there anybody who disputes the advantages of positive air-cooling by a fan, so that the engine when running can be kept cool, even though the air is not in motion? Our orders do not indicate it.

* * *

One of the main reasons why makers are discarding the planetary for the sliding gear transmission, is that they want to avoid dissatisfaction due to rapid depreciation, and the troubles that occur in complicated moving mechanism. Every car in the market, whose price will warrant, will have sliding gear transmission next year. All Orients—even the lowest priced—have it this year.

* * *

All these statements are recognized truths.

* * *

Have you seen our magazine advertising? It has got a different slant from the other kinds, and it keeps a big solid room full of stenographers busy answering letters that pour in from our publicity campaign.

There are the names of a good many people right in your territory—wherever you are—who want the particulars about Orients. Who is going to sell them?—nearly 9½ thousand interested people up to the date this is written (March 20th).

ORIENT TOURING CARS

Model E, Touring Runabout, with semi-racing body,	16-H. P., \$1500
Model E, With Detachable Tonneau, -	16-H. P., 1650
Model F, Light Touring Car with Tonneau,	16-H. P., 1650
Model G, Touring Car, - - -	20-H. P., 2000
Model de Luxe, Touring Car, - - -	20-H. P., 2250

ORIENT BUCKBOARD LINE

Buckboard, Model A, -	4-H. P., \$375
Surrey, Model B, -	4-H. P., 450
Runabout, Model C, -	4-H. P., 475
Tonneau, Model D, -	4-H. P., 525

WALTHAM MANUFACTURING COMPANY

Factory: WALTHAM, MASS.

General Sales Offices: 44 Broad Street, NEW YORK

Members of Association of Licensed Automobile Manufacturers

APPERSON



30-40-50-Horse Power, Four-Cylinder Cars

**Twelve Years of Actual Experience
in Building Gasoline Cars**

**Our Four-cylinder Cars have been tested for
Three Years, and we offer no long list of excuses
called improvements.**

**Our cars have always run well and our cus-
tomers are pleased.**

WRITE FOR OUR LARGE CATALOGUE

**Apperson Bros. Automobile Co.
Kokomo, Indiana**

BRANCHES:

66 West 43d Street, New York

43 Columbus Avenue, Boston

394 Wabash Avenue, Chicago

Members Association Licensed Automobile Manufacturers



Locomobile Gasolene Cars

are not only equal in all respects to the best foreign cars, but are a *great deal better*. There are many reasons for the superiority of LOCOMOBILE Cars, but little room here to state them. What we want you to do is to send for our catalogue. It is not a rambling mass of generalizations, but a book of facts and figures. Our catalogue tells you *why* the LOCOMOBILE is better than any other car in the world. Mailed free.

1905 MODELS. ALL 4-CYLINDER, SIDE ENTRANCE CARS

15-20 H.P. Price, \$2,800	20-25 H.P. Price, \$3,700	30-35 H.P. Price, \$5,000	40-45 H.P. Price, \$7,500
Weight, 1,800 lbs. Make-and-break ignition. Pressed steel frame.	Weight, 2,300 lbs. Jump spark ignition. Channel steel frame.	Weight, 2,700 lbs. Make-and-break ignition. Pressed steel frame.	Weight, 3,000 lbs. Make-and-break ignition. Pressed steel frame.

The *Locomobile* Company of America, Bridgeport, Conn.

NEW YORK, Broadway and 76th St.
PHILADELPHIA, 219 N. Broad St.

MEMBER ASSOCIATION OF LICENSED
AUTOMOBILE MANUFACTURERS.

BOSTON, 15 Berkeley St.
CHICAGO, 1354 Michigan Avenue



TRADE MARK



TRADE MARK

GOODRICH AUTOMOBILE TIRES

EMBODY THE INTEGRAL CONSTRUCTION

The Goodrich Tire is built as a unit from the fabric foundation to the outside of the tread.

Every part indissolubly connected and sharing the working strain with every other part.

The most powerful construction known to tire builders and capable of resisting the greatest amount of *weight, speed, friction and pressure.*

Made and vulcanized entire, thus eliminating all weak points.

Our process requires a *single vulcanization*, which is accomplished by subjecting the tires for a *long time* to a *low degree of heat*. We thus retain the full strength of the fabric, and impart to the rubber a toughness and lasting quality possessed by no other tire.

On account of this extreme toughness, Goodrich Tires seldom require retreading.

New treads, however, can readily be applied to our tires. All branches fully equipped to do this character of work to the highest degree of perfection. Absolute satisfaction guaranteed.

The Bailey "Won't Slip" Tire. Regular Goodrich construction, but provided with the Bailey "Won't Slip" Tread. Prevents slipping, slewing or skidding.



Rims branded in the channel with this copyrighted mark have been inspected and pronounced perfect. We guarantee our tires only on rims so branded.

THE B. F. GOODRICH COMPANY, Akron, Ohio

NEW YORK:

66-68 Reade St. and 1625 Broadway

BOSTON:

161 Columbus Ave.

PHILADELPHIA:

909 Arch St.

BUFFALO:

9 W. Huron St.

CLEVELAND:

420 Superior St.

DENVER:

1444 Curtis St.

SAN FRANCISCO:

392 Mission St.

DETROIT:

80 E. Congress St.

LONDON, E. C.:

7 Snow Hill

CHICAGO:

141 Lake St.



TRADE MARK



TRADE MARK

OLDSMOBILE



TO MERCHANTS

We have a proposition on Commercial Vehicles which appeals to the common sense, enterprise and pocket book of any merchant dependent on the horse and wagon for delivery service. Our delivery cars are easily meeting the most exacting requirements of department and general store delivery, city and country parcel express work, etc. We have made these requirements a practical study, which has enabled us to produce the required car---one strong, substantial, roomy, cheap to operate and easy to control---at a price which makes it a highly profitable investment. We would like to submit our proof to you as a practical business man, if you will kindly send us your address.

Olds Motor Works

1300 Jefferson Avenue

Detroit, Mich., U. S. A.

Member of the Association of Licensed Automobile Manufacturers

MICHELIN

More Michelin Victories. At the recent Automobile races in Cannes, France, the first six cars to finish used MICHELIN TIRES.

The more you know about tires the better you like the MICHELIN.

These tires have proved their worth thousands of times in Touring and in Racing.

To-day they are the peer of all others.

Why MICHELIN Inner Tubes give best service and why they are red:

Our rivals say that is because they contain brick dust, but any chemist will detect the presence of *antimonic sulphide*, more commonly known by the name of *golden sulphuret of antimony*. This substance, which owes its name to its bright orange-red color, has the property of making *Para rubber*, but only *Para*, very pliant and very durable. No other india rubber could withstand the mineralization, i. e., the combination with the *antimonic sulphide*, but in a very short time would become hard. This explains the superiority of our air tubes over others and also their somewhat high price, because we can only employ the finest *Para* in their manufacture.

Thus it is the incorporation of a certain amount of *golden sulphuret of antimony* with the india rubber of the tubes which gives them that red color which astonishes many persons. But it does not necessarily follow that all red tubes are made of *Para rubber* mineralized with *antimonic sulphide*. Frequently, in fact, poor imitations of our tubes have been attempted by mixing inert dye powders, for instance ochre or vermillion, with india rubber, but the products thus obtained have never been able to compete, and for a good reason, with mineralized rubbers. Those persons who gave them a trial lost all the illusions they had cherished regarding their worth after using them for five or six months, or even for a shorter space of time.

Michelin Tires do not rim cut.

Write for instruction book.

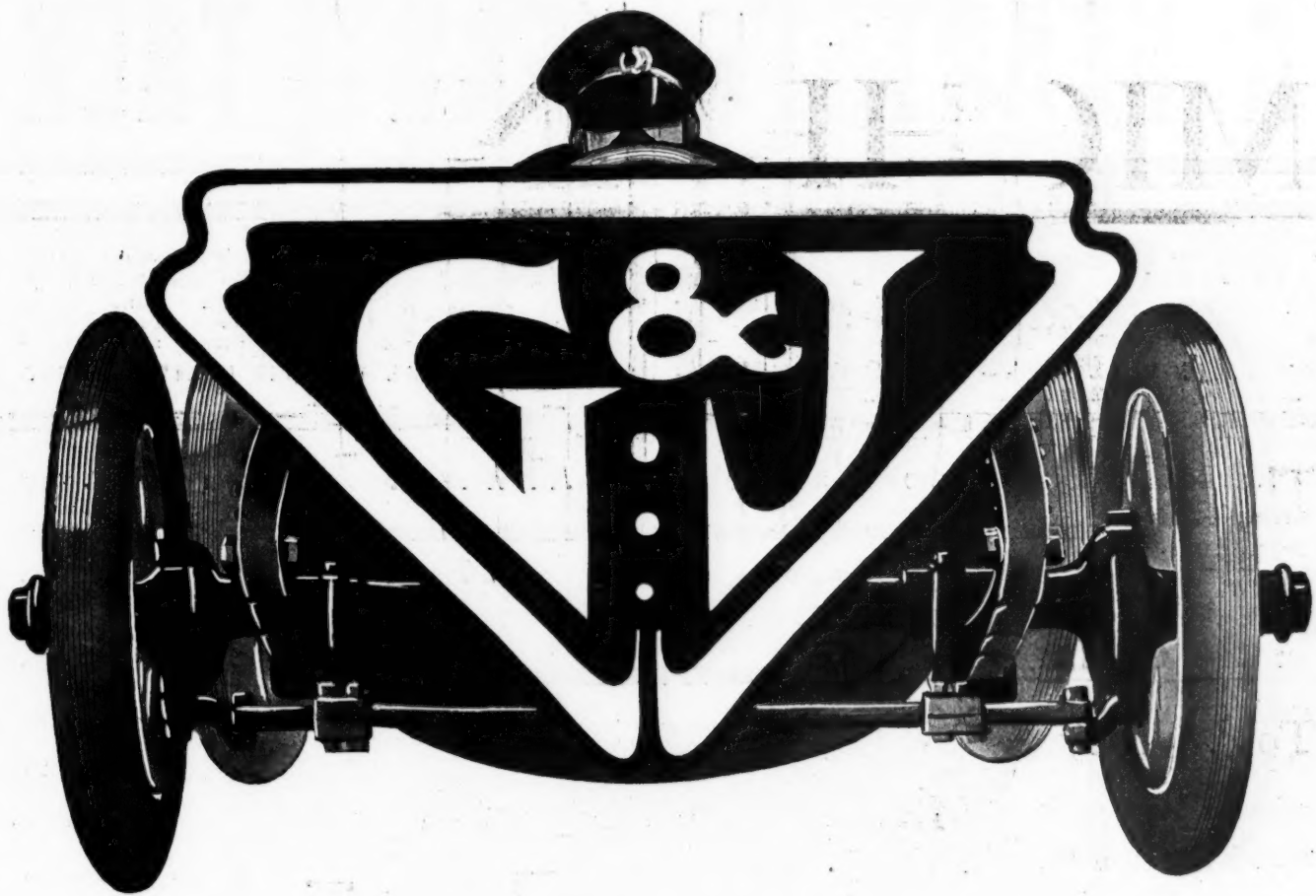
We are the sole representatives in the United States for the Michelin Tire.

E. D. WINANS,
General Manager.

Michelin Tire American Agency, Inc.

6 West 29th Street, New York.

Telephone: 4657 Madison Square.



Thread Fabric Tires

No Lugs

EASIEST TO HANDLE
NO PINCHED TUBES
NO EDGE CUTTING
NO BLISTERING
MOST DURABLE

So resilient that they save one-fourth the power

We have printed a booklet which tells all about
Thread Fabric Tires. Better send for it.

G&J TIRE CO.
Indianapolis

CHICAGO
429 Wabash Avenue

BOSTON, 43 Columbus Avenue
CLEVELAND, 337 Huron Street

DETROIT
247 Jefferson Avenue



Rims branded in the channel with these copyrighted marks have
been inspected and pronounced perfect. We guarantee our tires
on all rims so branded.



A HEART TO HEART TALK

WITH THE LIVE DEALER

WHO IS WILLING TO BE CONVINCED

Reasons why you should secure the Queen agency:

1st. Because we have the most complete line of cars ever offered by any manufacturer—seven (7) different models.

2d. Excellent workmanship throughout, high finish, swell upholstery, powerful motor and popular price

makes them natural sellers.

3d. A well pleased customer this year means increased sales in the future; live agents appreciate these facts and are securing territory.

WITH THE PROSPECTIVE BUYER

WHO WANTS ALL THAT HIS MONEY WILL BUY

A few reasons why you should buy a Queen:

1st. Because they have no equal on the market for the price and quality.

2d. They are finely finished throughout, built of the best material, ensuring long life and easy running, simple in construction with ample power for all conditions.

3d. All parts interchangeable insuring you against vexatious delays.

4th. We are granting agencies only to thoroughly responsible parties who will be courteous and attentive to customers.

MODEL "E"

Price \$1,000



QUEEN

C. H. BLOMSTROM MOTOR COMPANY

Chicago Agent: HENRY BRANSTETTER
1466 Michigan Ave.

DETROIT, MICHIGAN

New York Agent: C. A. DUERR & CO., Inc.
Broadway and 58th St., N. Y.

THE ROYAL TOURIST

"True Blue"



32-38 H. P.

GUARANTEED

2650 LBS.

\$4,000

Direct Flexible Shaft Drive—Free Driving Axle—Perfect Throttle Control
—Without Mechanical Governor—Positive Automatic Lubrication of Entire
Motor and Transmission—THE GREATEST H. P. FOR WEIGHT OF
CAR AND 5 PASSENGERS.

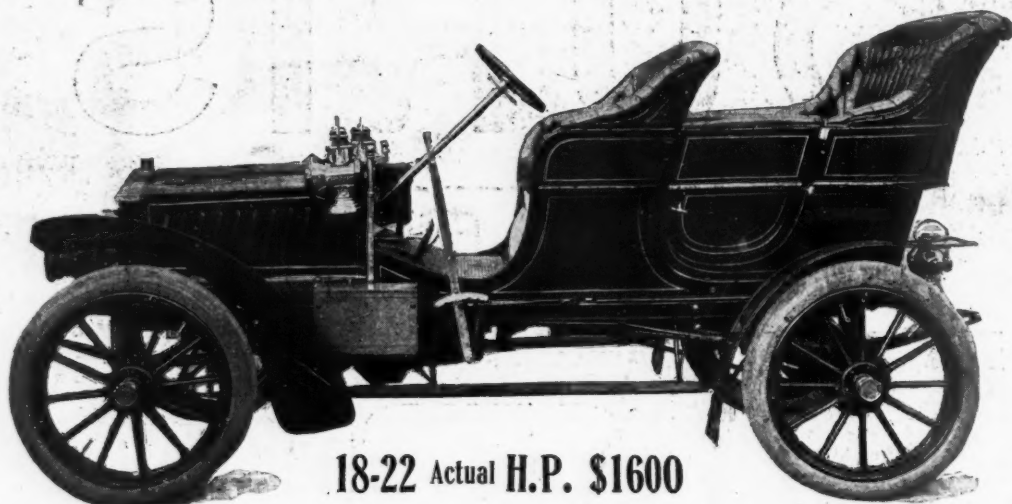
WRITE DEPT. 2 FOR CATALOG AND NEAREST AGENCY

ROYAL MOTOR CAR CO.

CLEVELAND, OHIO

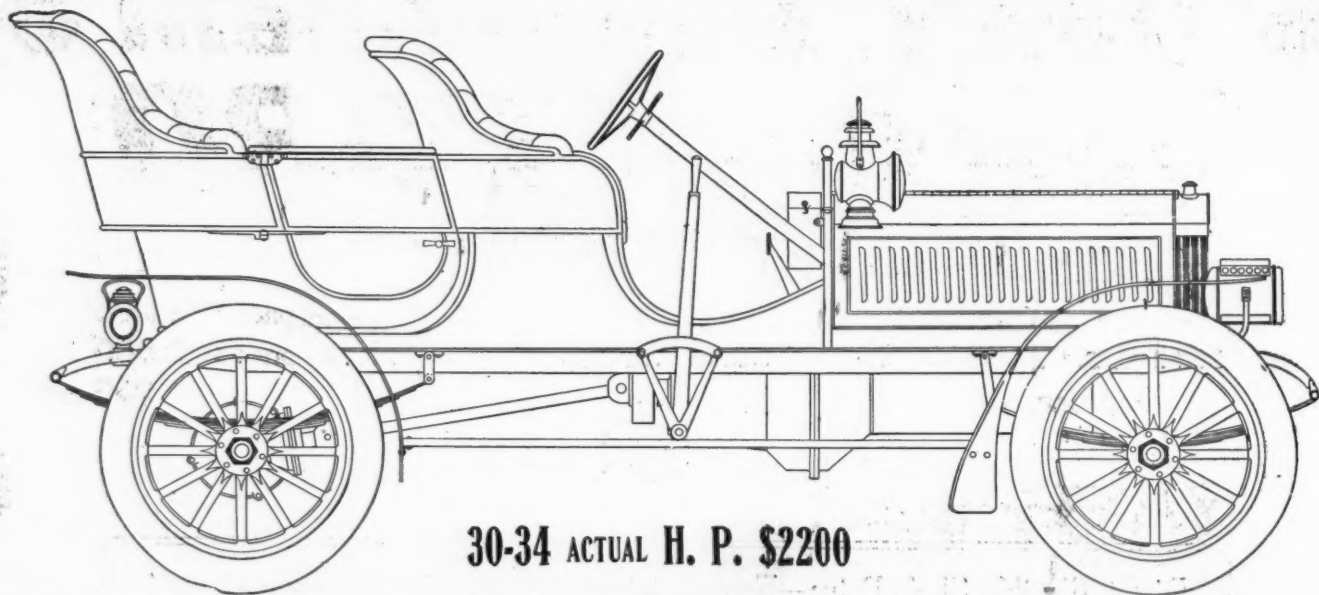
"RIGS THAT RUN"

NOTE—WE ARE THE OLDEST MANUFACTURERS OF GASOLINE AUTOMOBILES IN THE UNITED STATES



18-22 Actual H.P. \$1600

The simplest car ON EARTH, a child can run it. Will carry 5 people anywhere from one to forty miles an hour. Design, finish and upholstery are positively unsurpassed NO MATTER WHAT THE PRICE. We brought out the first 2 cylinder over seven years back, and our YEARS OF EXPERIENCE enables us to eliminate the many defects which are sure to develop in new cars. THIS CAR IS EQUAL (both in size, H. P., speed and finish) to most of the 4 cylinders listing from \$2,500 to \$3,000. Double cylinder (opposed) foot governed, motor and transmission integral, CANNOT GET OUT OF LINE. Sliding gear 3 speeds forward and reverse, shaft drive, direct on high speed, large double side entrance tonneau, positively noiseless. ALL OPTIONS as to COLOR, TIRES, FINISH, UPHOLSTERING, ETC., full equipment of 2 searchlights, 2 side lights, tail light. If we charged \$3,000 this car would BE EQUAL TO ANY AND SUPERIOR TO MANY. It stands without a parallel in automobile history. For thirteen consecutive years our sales have increased EACH YEAR. 1905 will totally eclipse all previous attempts. (THERE MUST BE A GOOD REASON FOR "OUR SUCCESS.")



30-34 ACTUAL H. P. \$2200

Turn these pages either way, Mr. Agent. We know there are others and comparison is all we ask. Pick out all the 4 cylinders listing from \$3,000 to \$4,000 and then turn back and think it over. What do the others say? Engine (4-cyl.) vertical under hood, 30-34 actual H. P., speed 1 to 50 miles an hour, sliding gear, 4 speeds, shaft drive, direct on high, foot governed, (simplest control on earth), tires 32x4", automatic carburetor (never requires adjustment), single lever control, make and break ignition with magneto, irreversible steering gear, especially powerful brakes (4), Timken roller bearings, elastic frame armored type, 12" ground clearance, double side entrance tonneau, special high curved back, French type, practically noiseless, no vibration. THESE ARE THE GOOD FEATURES WHICH ALL THE GOOD CARS CLAIM. WE HAVE EVERY ONE OF THEM, AND, WHAT IS MORE, OUR CLAIMS ARE BACKED UP BY 12 YEARS OF GOOD SOLID EXPERIENCE. Our 4-cylinder, 30-34 actual H. P. car is fully the equal of any car on earth, listing at double OUR PRICE, and is easily superior to many listing at \$3,500. DON'T BE SKEPTICAL AND SAY IMPOSSIBLE; it is possible, in fact, it is a reality, when we say we are at least \$1,000 below our nearest competitor. We have ALREADY PROVEN IT. Look us up, if you will (we have yet to lose our first long distance, endurance or hill-climbing contest), and we have always entered stock cars in EVERY BIG EVENT. LASTLY: Our capacity on this model is 300 cars and they are bound to go fast. WE ARE MAKING SOME RADICAL CHANGES IN OUR SELLING AGENTS and have some excellent territory at our disposal. Our AGENTS' POLICY is the best AUTOMOBILE INSURANCE ON EARTH. YOU ARE ABSOLUTELY PROTECTED FOR 366 DAYS. Our discount is the most liberal QUOTED and there is something ahead of you to keep hustling for ALL THE TIME. (WRITE TODAY FOR OUR SPECIAL DISCOUNT.) Tomorrow may be too late.

ST. LOUIS MOTOR CARRIAGE CO.

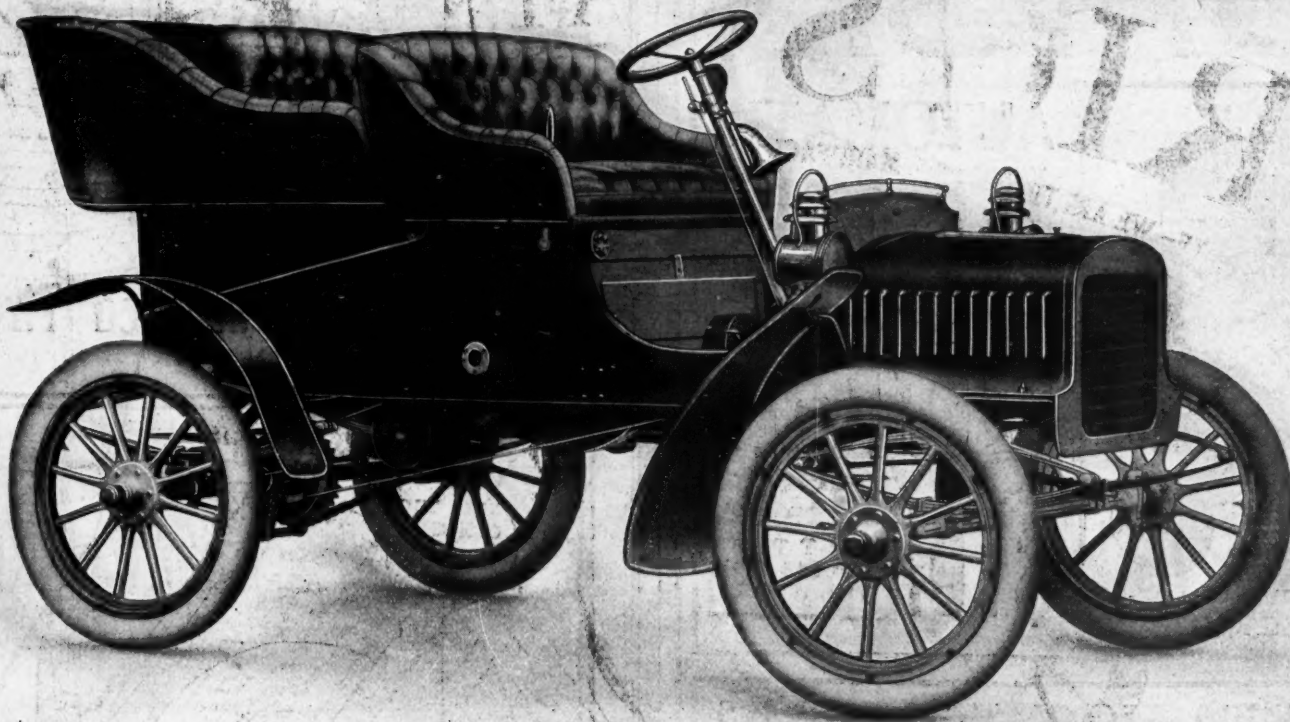
11-19 N. VANDEVENTER AVE.

ST. LOUIS, MO. - - U.S.A.

GENERAL SALES OFFICES

Write: ST. LOUIS MOTOR CARRIAGE CO.

T. B. Vanalstyne, Sales Mgr. Binghamton, N. Y.

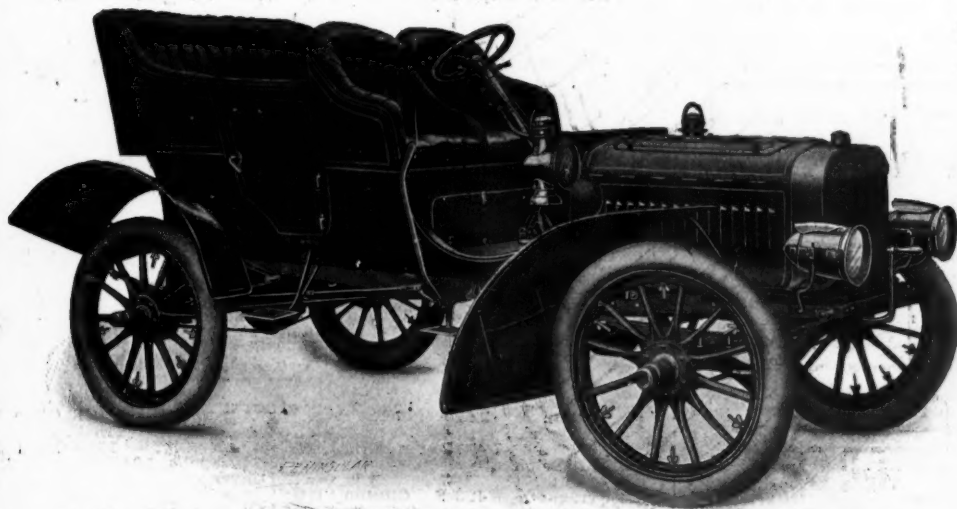


FORD MODEL "C," PRICE, \$950

Don't Experiment Just Buy a FORD

Send for detailed description of

Model "C" Tonneau Car, 1,250 lbs., 2 cylinder opposed, price	\$ 950
Model "F" Side Entrance Tonneau, weight 1,400 lbs., 2 cylinder opposed, price	1,200
Model "B" 4 cylinder, vertical, weight 1,700 lbs., side entrance tonneau, price	2,000
Delivery Car , weight 1,350 lbs., 2 cylinder opposed, price	950



FORD MODEL "B," PRICE, \$2,000

Full particulars
about agencies
sent on request

FORD MOTOR CO.
DETROIT, MICH.

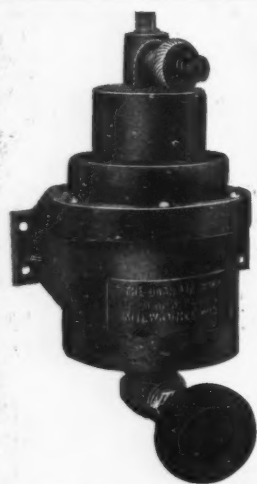
Canadian Trade
Supplied by the
FORD MOTOR CO.
OF CANADA, Ltd.
Walkerville, Ont.

DASH

AUTOMATIC

TIRE

PUMP



Made of Highly Polished Brass.
5 inches long; 2 1/4 inches diam-
eter; weight, 2 1/2 pounds.

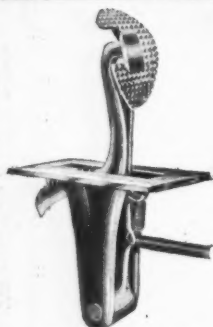
\$10.

"LET THE
ENGINE DO
THE WORK"

HERE'S HOW IT WORKS

Fasten the Pump to the dashboard.
Connect by means of 1/2-inch pipe to the explosion chamber of one of the cylinders.
Attach rubber tube (furnished with pump) from pump to tire.
Start engine and inflate tires as desired up to 110 lbs. pressure.
Pure air only is delivered to the tires. Nothing from engine can get in.
Pump cannot possibly rattle or get out of order.
Is always ready to use.
Standard fittings. Self lubricating.
Tire connections and ten feet of rubber hose in canvas sack with each pump.

ABSOLUTELY GUARANTEED



STYLE "A"—Black, \$2.50
Nickel, " " " 3.25

"PERFECT" AUTOMATIC LOCKING BRAKES

Locks or releases brake at will by normal motion of operator's foot.
Can be operated entirely free of ratchet when so desired.
Can be locked instantaneously by half-inch movement of foot.
Impossible for robe or blanket to catch in ratchet.



STYLE "B"—Price, \$1.25

"PERFECT" MUFFLER CUT-OUT VALVES

Efficient Durable Reliable

Explosions in muffler cannot possibly damage muffler. Controlled by pedal on footboard. Will fit any car.

DEALERS

Better get ready for the demand which we are going to create for our goods. Interesting discounts to trade.

SEND FOR DESCRIPTIVE CIRCULARS

Garage Equipment Company
MILWAUKEE, WISCONSIN

If the Fisk Had Failed to "Make Good"

You would not now be hearing
so much about

Mechanically Fastened Tires



It was the first tire of the sort—the first REAL automobile tire, and its remarkable success is what has caused the world to "sit up and take notice." The fact is perfectly obvious to all who use their brains to think with, and conveys a world of significance.

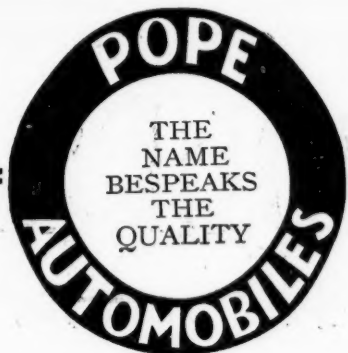
Let us send you a copy of our booklet.
It's full of "meat."

THE FISK RUBBER COMPANY

Chicopee Falls, Mass.

BRANCHES:

Boston,	226 Columbus Ave.	St. Louis,	3908 Olive St.
Springfield,	40 Dwight St.	Omaha,	1116 Farnum St.
New York,	754-756 Seventh Ave.	Kansas City,	1330 Main St.
Philadelphia,	828 Arch St.	Minneapolis,	704 Hennepin Ave.
Atlanta,	103 N. Pryor St.	Denver,	1533 Glenarm St.
Syracuse,	423 So. Clinton St.	San Francisco,	114 Second St.
Buffalo,	893 Main St.	Los Angeles,	1034 So. Main St.
Cleveland,	318 Euclid Ave.	Montreal,	Canada.
Detroit,	262 Jefferson Ave.	London,	England.
Chicago,	1251 Michigan Ave.		



Pope-Toledo Supremacy

THE wonderfully powerful, easy running, quiet, flexible and absolutely controlled Pope-Toledo engine transmits its power to the wheels by our **Double Chain, Direct Drive System** to an unbroken rear axle; a system of drive that in point of efficiency and desirability cannot be compared to the bevel gear for high-powered cars. We lose no power through driving shaft at an angle; waste no strength by dividing rear axle where strength is most needed. If there is an automobile in the world that has literally "Direct Drive" it is the Pope-Toledo, for it drives absolutely direct on high speed without a single idle gear in mesh.

Get a copy of our 1905 catalogue which contains the Pope-Toledo record, proving it the most powerful, reliable and easiest controlled automobile in the world.

30 H. P., front entrance	.	.	.	\$3,200
(Immediate Delivery)				
20 H. P., side entrance	.	.	.	2,800
30 H. P., side entrance	.	.	.	3,500
45 H. P., side entrance	.	.	.	6,000

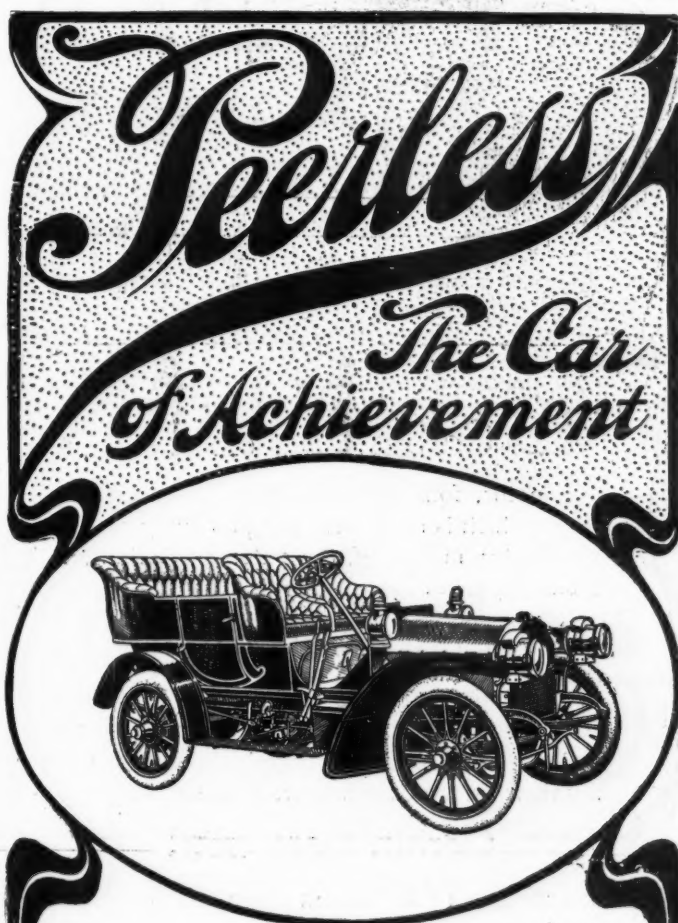
Victoria or Canopy Top, \$250 extra.



30 H. P., \$3,500

Pope Motor Car Co.
Toledo, Ohio

Members Association Licensed Automobile Manufacturers.



Peerless Brakes

Both foot brake and emergency hand brake are applied to rear axle.

They are located conveniently, work easily and powerfully.

RESULT IS

They do not wear on driving mechanism—can be instantly applied—are always efficient and safe.

1905 PRICES

24 H.P.	30 H.P.	35 H.P.	60 H.P.
\$3,200	\$3,750	\$4,000	\$6,000

Send for Catalogue now ready.

PEERLESS MOTOR CAR CO.

CLEVELAND, OHIO.

Member A. L. A. M.

L. S. & B. CO. CLEVELAND



Corbin Cars excel

in a motor, four cylinder, vertical, under the hood, which is absolutely and positively cooled by air by means of the patented Corbin air cooling system.

Corbin Cars excel

in a combining of the engine crank case and transmission gear case in such manner as to make them practically integral, thereby insuring their accurate alignment.

Corbin Cars excel

in a steel pan construction extending from the crank case to the front and side frame members, which completely excludes all dust and dirt from the motor mechanism.

Corbin Cars excel

in a positive acting force feed lubricator which automatically forces oil in regular quantities and with mechanical precision to all motor parts. The oil is fed in exact ratio to the engine speed and visible to the operator.

Corbin Cars excel

in the best of everything in materials, workmanship, finish and equipment.



Sold with the unqualified guarantee of a manufacturing organization with a half-century-old reputation to sustain.

Catalogue mailed on request.

THE
CORBIN

Motor : Vehicle : Corporation

NEW BRITAIN, CONNECTICUT

DUQUESNE

"Half of Thirty-Five"



A Few Years Ago

the First Men of America wound their watches with a key—no self-respecting man would tolerate such a crude contrivance today.

Today

dignified professional and business men make a spectacle of themselves in the public streets cranking the motors of their automobiles. The operation is not only undignified; it soils the clothes and is dangerous.

The Duquesne Car

starts from the seat—**every time**. The simple little device that accomplishes this in such a clever mechanical way is to the automobile what the stem-winding device was to the watch—it will revolutionize automobile building and **marks the passing forever** of the crude starting crank.

The Duquesne

equipment does not include a crank—it is not necessary. It's a relic of the days that were—the days of primitive automobile building.

Hereafter

discriminating buyers will insist on a similar device on all cars—other makers will have to "copy" **this DUquesne feature** as they have others.

The Price?

4-cylinder, air-cooled,
16-21 horse-power,

\$1750—"Half of
Thirty-Five"

Duquesne Construction Co. Manufacturers

JAMESTOWN, N. Y.

STANDARD PARTS FOR POWER TRUCKS AND WAGONS

The marked economy of power wagons for delivery, express and truck service, and their superior reliability when in reasonably intelligent hands, is so well established that those who are conversant with the facts cannot fail to see that power wagons are rapidly beginning to supersede horse service.

PARTS WE SUPPLY

STEERING GEAR, Complete	CHAINS	COUNTERSHAFT and REDUCTION GEARS
FRONT AXELS, Complete	SPROCKETS	COUNTERSHAFT BRAKES
HUB BRAKES	DISTANCE RODS	MOTOR HANGERS
ELECTRIC MOTORS	CONTROLLERS and Accompanying Details	

SEND FOR CATALOGS Nos. 2, 3 and 5.

TOURING CAR PARTS, CATALOGS Nos. 6, 7, 8 and 9

Federal Manufacturing Co., Elyria, Ohio

Selling Agent: HAYDEN EAMES, American Trust Bldg., Cleveland

THE PENNSYLVANIA RUBBER COMPANY

knows why better tires have been made abroad than in America.

You can have the benefit of this knowledge by using the

PENNSYLVANIA

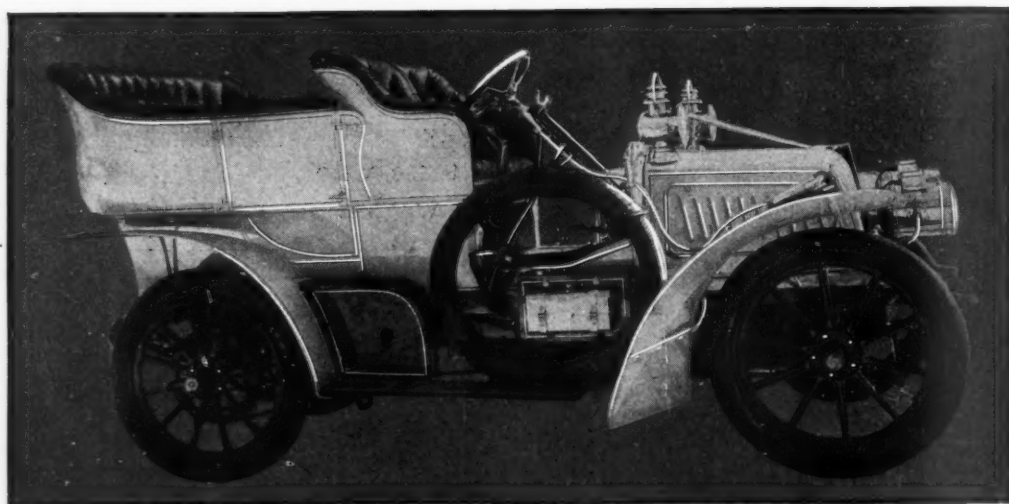


CLINCHER

JEANNETTE, PA.

WORTHINGTON AUTOMOBILE COMPANY

547 Fifth Avenue New York City



24 h. p. Berg Touring Car

IMMEDIATE DELIVERY

MEMBERS A. L. A. M.

"One Good Cylinder

in a Cadillac is better than two poor ones usually found in most cars," is the way one Cadillac dealer who resides in the mountains, and who last year sold twelve cars of a prominent two-cylinder make, puts it up to his trade. We have never said much about the advantages of single cylinder horizontal construction as compared with the double opposed type, believing as we do that when buyers know all WE do of the difficulties encountered in this type they will then readily understand our reasons for not building a two-cylinder horizontal engine.

In the Cadillac single cylinder cars we give the owner a machine with ample power to carry the load for which the car is built at a good rate of speed over any road, and at a minimum cost for operating and up keep expense. In other words, more mileage for money invested than he can get from any other car at any price.

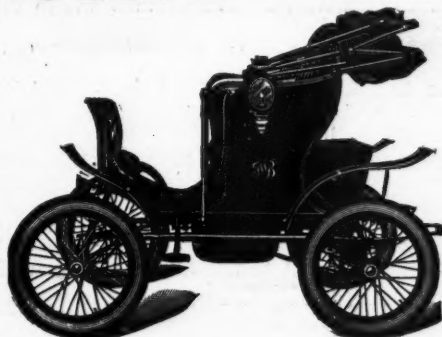
When you buy a Cadillac you get the car you ought to have at the price you ought to pay.

CADILLAC AUTOMOBILE COMPANY, Detroit, Michigan

Members of Association Licensed Automobile Manufacturers

CLASSIFICATION ... WHY? DISTINCTIVE

THE LIGHTEST
THE STRONGEST
MOST DURABLE
MOST EFFICIENT
BEST FINISHED



ABSOLUTELY SAFE
PERFECTLY CLEAN
BEST TO RIDE
MOST ECONOMICAL
TO KEEP

THE BAKER ELECTRIC

Attractive in Rich Finish and Design. ✱ Simply Manipulated. ✱ Always Satisfactory.
A Carriage Any Lady Can Drive.

SEND FOR OUR B K CATALOG.

THE BAKER MOTOR VEHICLE CO., Cleveland, Ohio

Chicago Agents: PARDEE-ULLMANN CO., 1400 Michigan Ave., Chicago.



STUDEBAKER

No. 9503 STUDEBAKER 4-CYLINDER GASOLINE TOURING CAR

BUILT FOR STRENGTH, SPEED AND ENDURANCE

Ease of control and operation unsurpassed. Each vital
part tested beyond any possible demand. : : :
"STUDEBAKER QUALITY" THROUGHOUT

Studebaker Automobile Co. SOUTH BEND, INDIANA

Members of the Association of Licensed Automobile Manufacturers.

BRANCH HOUSES:

New York City, Broadway and 7th Ave.,
at 48th St.
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Sts.
Dallas, Texas, 317-319 Elm St.

AGENCIES IN ALL PRINCIPAL CITIES

MODEL 9503

SPECIFICATIONS:

MOTOR: Four-cylinder vertical, 20 to 24 horsepower. TRANSMISSION: Sliding Gears. SPEEDS: Three forward and one reverse; four to forty-five miles per hour. STEERING: By wheel and irreversible. BRAKES: Two entirely independent systems. Hand lever, internal expanding on both rear hubs; foot lever on drive shaft. IGNITION: Jump spark with dynamo and supplementary storage batteries. CARBURETER: Float feed with 1905 refinements. COOLING: By pump and cellular radiator. GASOLINE CAPACITY: 14 gallons. LUBRICATION: Positive with mechanical oiler, with sights located on dash. COMMUTATOR: Accessible and maximum wearing capacity. FRAME: Pressed steel. WHEEL BASE: 96 inches. VALVES: Mechanically actuated. AXLES: Front axle tubular steel; rear axle so arranged that no strains from the weight of the car fall on the driving shafts.

WRITE FOR OUR CATALOGUE



DIETZ

Lamps are made wherever possible with machinery—
all alike and all good. The parts are always interchangeable. No hand work can equal the strength and symmetry of that done in our up-to-date factory devoted to the manufacture of *Modern American Goods* by *Modern American Methods*.

Notice the convenient and safe way in which we fasten the oil pot to the lamp. A turn of the hand and it is off—a turn of the hand and it is on, and when on, absolutely safe from falling off.

All live dealers sell them at reasonable prices.
Send for circular

R. E. Dietz Company

37 LAIGHT ST., NEW YORK

— ESTABLISHED 1840 —



FIVE TON TRUCK.

Gasoline Freight Trucks and Observation Cars

ANY CAPACITY OR SPEED
WRITE FOR ESTIMATES

CONSTRUCTION Heavy and Substantial. Safety factor of Five. STEEL FRAME. Size of Platform to suit purchaser. Enclosed Cab. ENGINE, four cylinder, vertical, Improved Design.

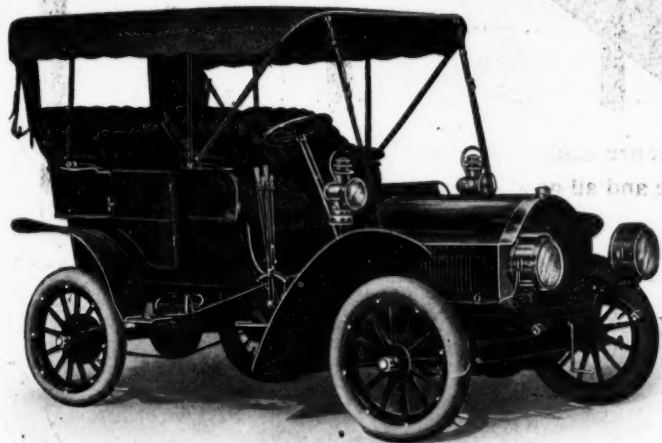
SLIDING GEAR TRANSMISSION; Three speeds ahead (maximum 10 miles per hour) one reverse.

Now operating successfully under Commercial Conditions, demonstrating Economy and Reliability.

WHITING FOUNDRY EQUIPMENT CO.

GENERAL OFFICE AND WORKS: HARVEY, ILL. (CHICAGO SUBURB) U. S. A.
CHICAGO OFFICE: 1547 MARQUETTE BUILDING

STEVENS-DURYEA NEW 20 HORSE POWER 4 CYLINDER TOURING CAR



All we wish to emphasize is, TRY one of our reliable, efficient and durable carriages, and thus ascertain the secret for the invariable popularity of the STEVENS-DURYEA

Send for beautifully illustrated catalogs, embodying detailed description, and also history and records of our noted "racing spider." **ASK YOUR AUTO AGENT**

PRICE, 1905 TOURING CAR, \$2500.00

J. STEVENS ARMS & TOOL CO.

705 Main Street,

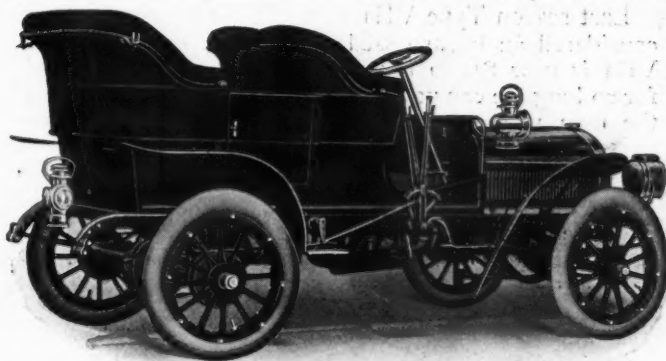
CHICOPEE FALLS, MASS., U. S. A.

Members Association Licensed Automobile Manufacturers

Pittsfield, Mass.
Gentlemen: I take great pleasure in speaking a good word for the STEVENS-DURYEA. This is the third automobile I have owned, and it beats them all. I am delighted with it. I cannot speak too highly of it. In fact, I would not take three times what I paid for it if I could not get another just like it. It certainly is the smoothest running, easiest riding machine yet produced. There is not a cheap thing in the construction; every part is beautifully made. Such a piece of work is bound to give satisfaction and do good work. I use it every day and it is always ready for business. When my friends ask me what to buy my answer is, "STEVENS-DURYEA" every time.

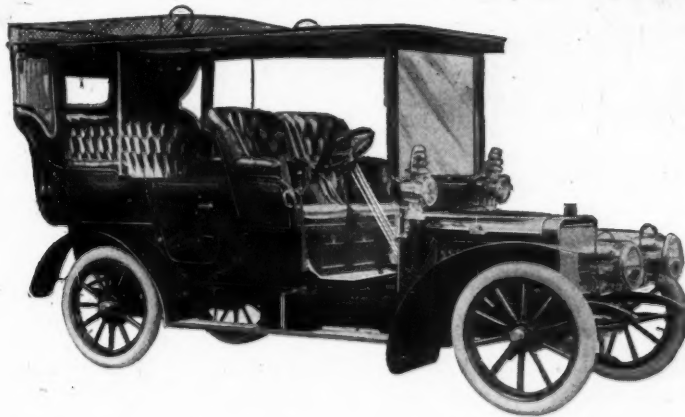
Very truly,
(Signed) DR. FRANK W. BRANDOW, Dentist.

FURTHER COMMENT IS UNNECESSARY



THE DARRACQ

**Represents the Most Advanced
Features in Foreign Improvement**



**Equipped with the Latest Magneto and Jump Spark Ignition
Perfect Automatic Throttle Control
Positively Noiseless**

LET US PROVE THIS TO YOU

ALL PARTS KEPT IN STOCK

Up Town Store, 147 W. 38th St., NEW YORK

The F. A. LA ROCHE CO.

652 to 664 Hudson Street, NEW YORK

Autocar

Type VIII
\$1400

A Wonderful Value

Type VIII Autocar at \$1400 represents a wonderful automobile value. This type is the foundation of the Autocar's enviable reputation. It is a car built upon honor throughout. There is nothing experimental about it—nothing uncertain in its construction. During 1904 Type VIII was tested on all sorts of American roads—under all kinds of conditions. It has proved its reliability and efficiency so well as to put Autocar Type VIII in the very front of its class.

Last season Type VIII was sold for \$1700 and was considered an unsurpassed value. The price of Type VIII is now \$1400 because, having built this model for so long we can now build it more economically. For the man who wants a thoroughly reliable four-passenger car at a moderate price, Type VIII at \$1400 is his opportunity.

Catalogue giving full description of Type VIII, Type X Runabout, and Type XI Four Cylinder Car, with dealer's name, sent free upon request.

THE AUTOCAR COMPANY, Ardmore, Pa.
Member Association Licensed Automobile Manufacturers.

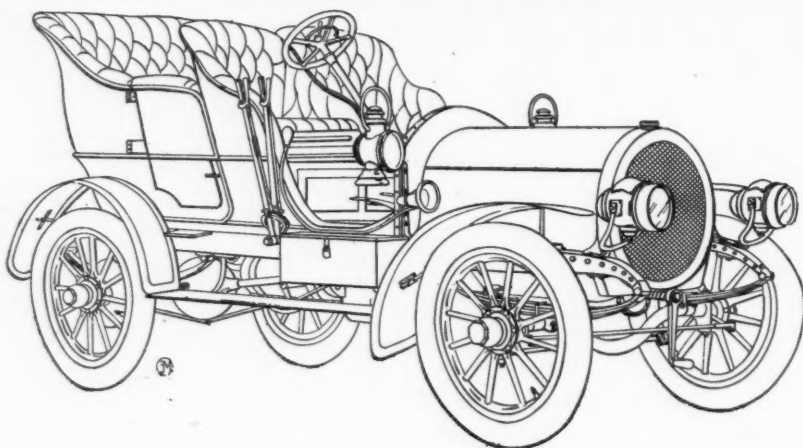


Specifications, Type VIII:

Horizontal two-cylinder opposed engine—no noticeable vibration. Twelve actual horse-power. Oiled automatically. Water cooled.

Transmission, sliding gear type. Three speeds forward and a reverse. Ball bearing, shaft drive. No greasy, gritty chain. Front and rear construction has ball bearings throughout. Gasoline tank holds 10 gallons—sufficient on good roads for 200 miles.

Tonneau is removable. Front seat divided. Engine and transmission case are accessible from above without disturbing body.



NATIONAL Model "C" Gasoline Touring Car

Five passenger, side entrance body, detachable tonneau, best of finish and trimming, new round radiator, oval hood, four cylinder $4\frac{1}{4} \times 5$ vertical, bevel gear drive, double ball-bearing slide gear transmission—direct on high, hardened steel gears, gear-driven commutator, rear wheels revolve on double ball-bearings on outside axle tube, all weight taken off inner axle and differential, spherical gear case, internal expanding metal to metal brakes, pressed steel frame, long wheel base, engine and transmission on sub frame, double steering connections.

24-30 H. P.

Price, \$2,500.

DISTRIBUTORS

New York: Homan & Shulz Co., Broadway and Thirty-eighth St.

Boston: Linscott Motor Co., 163 Columbus Ave.

Chicago: Hayden Automobile Co., 1337 Michigan Ave.

St. Louis: Westminster Automobile Co., 4290 Olive St.

San Francisco: F. A. Jacobs, 1331 Market St.

Springfield, Mass.: Fowler Automobile Co.

NATIONAL MOTOR VEHICLE CO.

1006 East Twenty-second Street



What Do You Want

in an Automobile? Is it service or adventure? A four to sixteen mile-an-hour speed always at your command, or a racing machine?

National Electric Vehicles

are thoroughly practical; simple in construction. Easy for any one to handle; noiseless, smooth running; go at desired road speed, yet under perfect control always. Ample battery equipment—the most powerful electric made. Our Catalogue shows every style.

Electrics

INDIANAPOLIS, INDIANA



Notice to the Trade.

We have entered suit against the United States agency of the Michelin Tire Co. for infringement of G & J Patents, and the trade is warned against the purchase of such tires.

The following manufacturers are licensed under G & J patents:

Hartford Rubber Works Co.
The B. F. Goodrich Co.
Diamond Rubber Co.
Morgan & Wright
Fisk Rubber Co.

Continental Caoutchouc Co.
Goodyear Tire & Rubber Co.
International Auto & Vehicle
Tire Co.
India Rubber Co.

G & J TIRE CO., MAIN OFFICE AND FACTORY **Indianapolis, Indiana**

"The Maxwell"

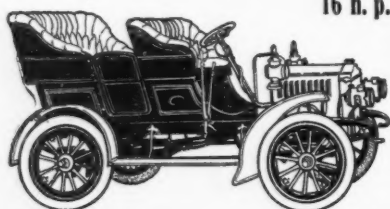
There is not one complicated detail throughout "Maxwell" construction. The number of parts has been cut down to a minimum, and each part has been treated as a special problem and carefully worked out to perfection. It is fundamentally a car easy to explain, easy to understand and easy to operate.

The owner of a "Maxwell" is absolutely sure of two things.

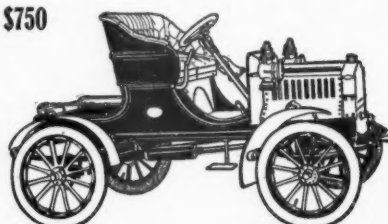
First, that no car in the market at any price is more reliable than his, and second, that he owns the one car before the public today in which, through its rare simplicity of construction, there is nothing to do but ride.

16 h. p. Touring Car, \$1400

8 h. p. Tourabout, \$750



The "Maxwell" cars have no pump (thermo-siphon). Their double opposed motor is in front under the hood and easily accessible in every part. They have Bevel Gear Drive. Metal Bodies. Transmission Case and Crank Shaft in Aluminum casting. "Perfectly simple and simply perfect."



Maxwell-Briscoe Motor Co.

TARRYTOWN, N. Y.

New York City Salesroom, 317-319 W. 59th St.

CAMERON

HONESTLY NAMED "THE CAR OF ECONOMY"



Model H—8-10 h. p.

Two-Cylinder Runabout, \$675

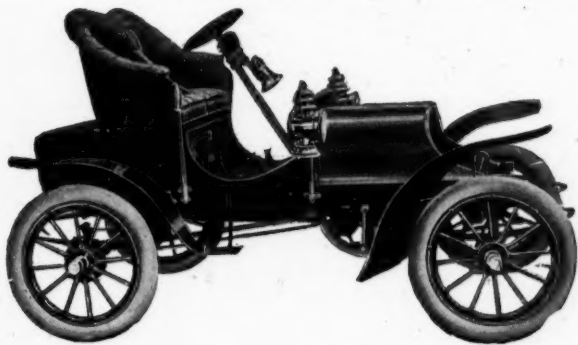
Detachable Tonneau, \$775

THE JAMES BROWN MCH. CO., Pawtucket, R. I.

HAS the cost of maintenance ever appealed to you as essential in purchasing a motor car? Although the pleasures of motoring are unlimited and your expense account may be likewise, still, all things considered, you do not want a motor car that is continually causing you trouble, annoyance and expense. What you want is a car with efficiency, stability, and the get there and get back qualities. Although the Cameron Cars have only been in the market four years, the Cameron air cooled motor dates back to January, 1898, over eight years of practical experience. We have done the experimenting and paid for it. We do not ask you to do any experimenting, but to simply enjoy the fruits of what we have paid thousands of dollars for, and that is, to obtain an Honest Car at an honest price.

Simple Arithmetic

No elaborate argument is needed to show the long train of advantages that follow



Franklin Air-cooling

Long ago every man who ever thought seriously on the subject admitted that air-cooling—if it were practicable—meant simplicity, strength, power, speed, comfort, safety, economy.

Only an "if" stood in the way. The Franklin system removed it; and that all the other advantages have surely followed is only the simple arithmetic of physics—as plain as two and two.

And the ability that Franklin air-cooling made possible is increased and amplified by Franklin engineering to a point unapproached in any other cars of their weight and class.

These facts have been fully demonstrated by actual performance, and thinking men recognize the logic of events.

Six Models for 1905

Runabout. Light Touring Cars, fixed and detachable tonneaus, side entrance or rear entrance. High-power side-door touring cars.

Send for catalogue describing them in detail.

H. H. FRANKLIN MFG. CO.

Syracuse, N. Y.

Member Association Licensed Automobile Manufacturers

Climbs any hill.

Outclasses all competitors.

Motor is quiet, reliable and efficient.

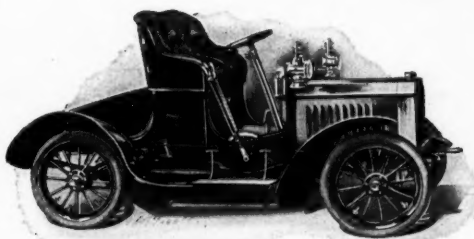
Power enough and to spare.

Only one on earth.

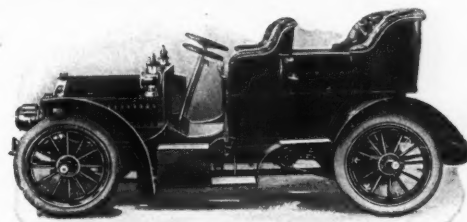
Uses 50 per cent less gasoline.

No muffler.

Does its work and does it well.



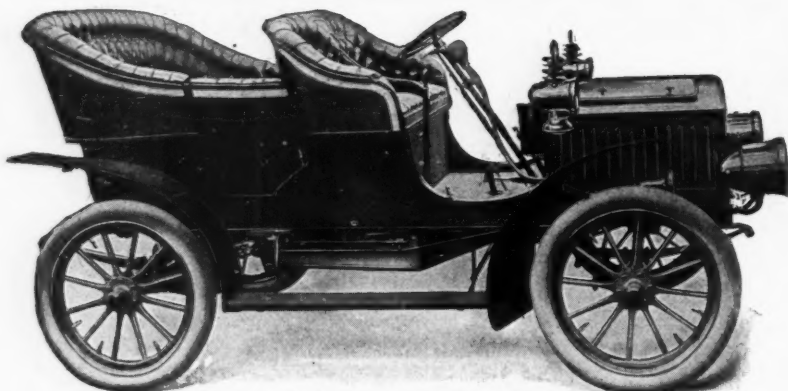
12-15 H. P., \$1200



24-28 H. P., \$2000

The E. H. V. Co., Middletown, Conn.

Two Impulses with Every Revolution



16 H. P., \$1,250.00

DO you realize that the two-cylinder two-cycle Elmore engine furnishes the same degree of power as the best four-cylinder four-cycle engines made? You think you realize it—but do you grasp what it means to you in increased efficiency and money saved? The two-cycle engine has achieved this year the most notable triumph recorded in the manufacture of automobiles—isn't it time for you to learn all you can find out about

this impulse-every-revolution idea? The most reliable self-starting engine in the world; parts and repairs reduced to a minimum; ability to run steadily at the high speed on any road or hill—these are a few of the features that put the Elmore literally in a class by itself.

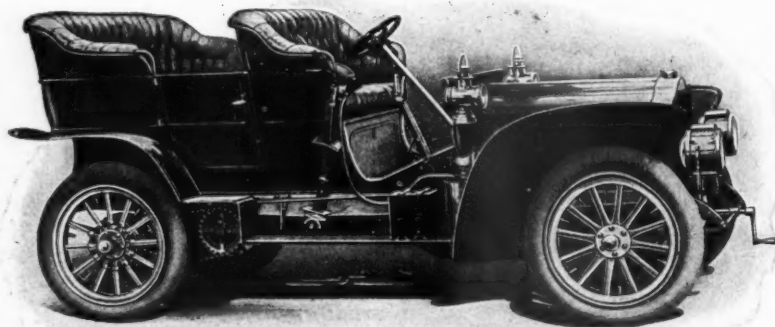
Send for our full line of literature, the booklet illustrating the 6,000-mile trip, our catalog, explanation of our engine, and the opinions of people who have used our cars—all sent free, or if you wish we will send a 10x12 photograph of the **Pathfinder** on receipt of 10 cents in stamps.

The Elmore Manufacturing Company
804 Amanda Street
CLYDE, OHIO

Members of the Association of Licensed Automobile Manufacturers.

Columbia Side Door Construction

We were the only American manufacturers to furnish side entrance bodies as standard last year. Profiting by twelve months of practical experience, we are building our frames to stand the strain so that there can be no cracking or sagging. The pressed steel frames of our 35-40 h. p. cars are of extra depth, thoroughly reinforced and are guaranteed to stand up. The frames of our 18 h. p. cars are proportionally strong. Following the result of the initial efforts of other makers to produce side entrance cars there have recently been many doubts expressed as to the practicability of this form of construction, but you need not be afraid of a COLUMBIA.



35-40 H. P. Touring Car. Mark XLV. \$4,000

Catalogue of Columbia 35-40 and 18 h. p. Gasoline Cars will be sent on request. Also, separate catalogues of Columbia Electric Carriages and Columbia Commercial Vehicles.

ELECTRIC VEHICLE COMPANY, Hartford, Conn.

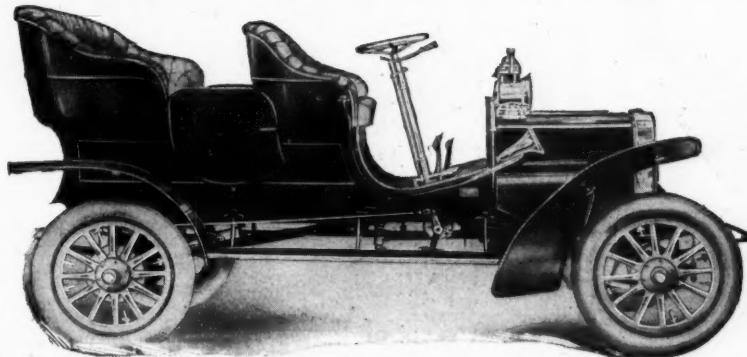
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134 West 39th Street

BOSTON
74 Stanhope Street

CHICAGO
1413 Michigan Avenue

Member Association Licensed Automobile Manufacturers

NORTHERN



NORTHERN TOURING CAR, SIDE ENTRANCE, 18 H. P., 100 INCH WHEEL BASE. WEIGHT, 2,000 LBS. \$1700.

Some automobile manufacturers are following the lead of the bicycle makers. The first wheels ran from 40 to 70 pounds in weight. The craze for lightness and speed resulted in machines weighing as low as 14 pounds.

Most of the medium weight bicycles are doing business to-day. Most of the light ones are in the scrap heap.

In *Northern* construction every effort is concentrated on producing a *perfect* machine—one that is balanced in every part. Not an ounce of unnecessary weight; every bit of necessary strength. All parts of the running gear built to withstand the severest strain of motor running at full speed over roughest roads.

It would be impossible to make the *Northern* any better, any stronger. The motor is built to fit the car, and the car fits the motor exactly. :: :: :: :: :: :: :: Write for new Catalogue No. 14.

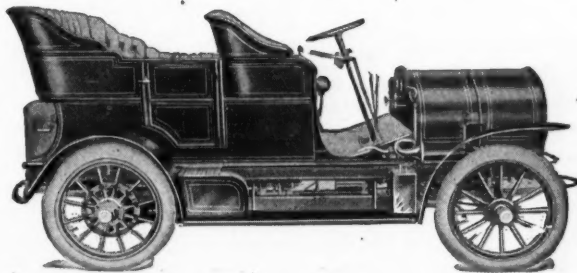
NORTHERN MANUFACTURING CO.

PETER FOGARTY
142 W. 38th St.
New York City Agent

DETROIT, U. S. A.
MEMBER A. L. A. M.

The Excellent....

SIDE DOOR
TONNEAU



PRICE
\$1,500.00

GROUT STEAM CARS

No Noise No Vibration Will not freeze in zero weather
Climb any Hill Speedy and Reliable

Grout Bros. Automobile Co.

280 East Main St., Orange, Mass. Boston Branch—151 Columbus Ave.



THE GASAULEC

"THE SIMPLE CAR"

A 40-45 H. P. five passenger, side entrance, gasoline touring car of the highest grade.

Without a starting crank.

Without a "clutch."

Without "change speed gears."

Without cams, rocker shafts, tappets or valve gearing.

Without the usual confusing multiplicity of operating levers.

Without complications.

Every movement of the motive power and the car, from a state of absolute rest, forward at any speed or reverse, controlled by one simple foot pedal having only forward and backward action. Positively no other speed or movement controlling device of any kind on the car.

Double brakes. Irreversible steering wheel. The GAS-AU-LEC is the simplest car in the world and the easiest to operate and maintain.

Not an experiment, but a success

Not a freak, but a practical revolution

VAUGHN MACHINE COMPANY

HAMILTON S. CORWIN, President.

PEABODY, MASS., U. S. A.

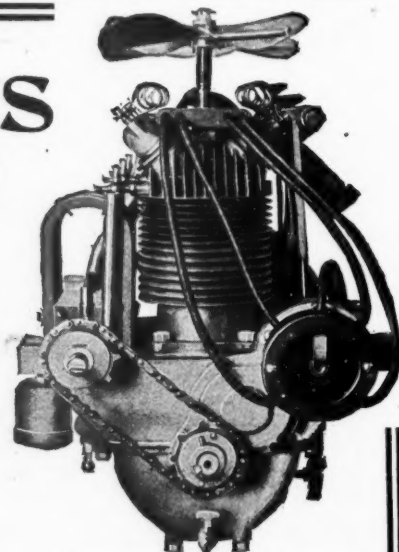
Merkel Auto Motors

**High Speed, Four-Cylinder Vertical
Air-Cooled Type**

Noiseless running. Piston rings and bearings ground to exact size. Connecting Rods drop forged. Heating surface minimized. Perfect ignition. No hammering of cam or valve lifters. No dry cells. Engine starts with one throw of the crank.

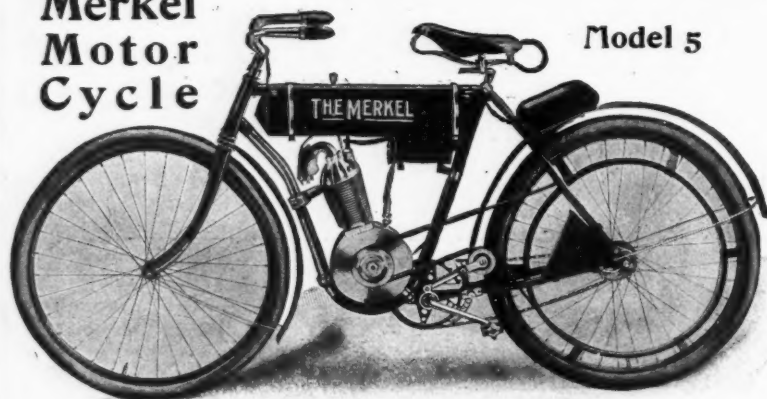
Only Successful Cold Weather Motor

Carburettor compensating float feed type. Positive action splash system lubrication. Mechanically operated valves.



Form H—Air-cooled—12-14 H. P.
Compact, Efficient—Weight 220 lbs.
Speed variation 500 to 2500 R. P. M.

**Merkel
Motor
Cycle**



Model 5

Built for hard and lasting service. Spring frame. Easy to operate and comfortable to ride. Very speedy. Moderate cost. Write for prices and particulars.

Address Dept. G.

MERKEL MOTOR CO.

FACTORY
LAYTON PARK

Milwaukee, Wis.



Continental Tires

are most popular where high grade cars are mostly used. They are essential to each other. CONTINENTAL TIRES hold most of the long distance world's records which were made on the heaviest and most-powerful cars. Only the best constructed tire can withstand such strain. If you are in a high grade district you will have frequent calls for CONTINENTAL TIRES. Prepare to meet the demand—send for dealer's agreement, prices and discounts. Address Department M. A.

THE CONTINENTAL CAOUTCHOUC COMPANY

EMIL GROSSMAN, General Manager

Factory: Hanover, Germany

298 Broadway, New York City

Samson Non-Skid Attachments on Continental Tires now in stock. Send for prices.

The \$500 Gale



WE wish to state that because this car is sold at so low a figure, is no sign that it is cheap. Every part is the best that we can make or buy, and we will replace any defective parts free of charge at any time inside of one year after purchase.

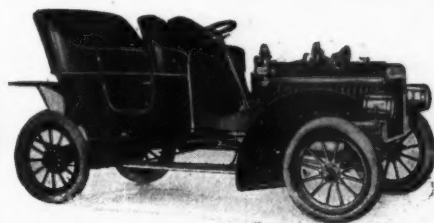
Eight H. P., horizontal single cylinder 5"x6"; weight, 1,100 lbs.; 72" wheel base; 28"x3" tires. New-type transmission; two speeds, forward and reverse; absolutely oil tight; cone clutch on high speed; new-type bands on low and back up; no gears running on high speed. Pump direct connected to engine. Gasoline and water tanks hold five gallons each. Kingston carburetor, Dow vibrator coil, Brown & Lipe differential, diamond chain. Speed, 30 miles per hour. Frame, angle iron. Body can be tipped up by loosening two nuts in floor of car and removing cotter pin. Car can be run without body, as all wires, connections, etc., are on the chassis.

Chicago Agents: MEAD MOTOR CO.,
1245-45 Wabash Ave.

THE WESTERN TOOL WORKS, Galesburg, Ill.

THE MOLINE

\$1600



18 H.P.

MODEL "B"

Four cylinder vertical motor, 4-inch bore, 4½-inch stroke; very simple and fully accessible; Automatic oiler, sight feeds on dash; Shaft drive to bevel gear axle; 105 inch wheel base. Three point spring suspension, with full elliptic scroll springs rear, and semi-elliptic crosswise in front, side entrance survey tonneau that is easy of access and comfortable to ride in. All bodies ironed for canopy or extension cape tops.

\$1000



12 H.P.

MODEL "D"

Double cylinder, horizontal opposed motor, 4½-inch bore and stroke. Single roller chain drive. Automatic lubricator, sight feeds on dash. 86-inch wheel base; 30 inch wheels, 3½-inch tires in the rear, 3-inch front. Three point spring suspension, same construction as on the touring car. Detachable side entrance survey tonneau that is comfortable and easy.

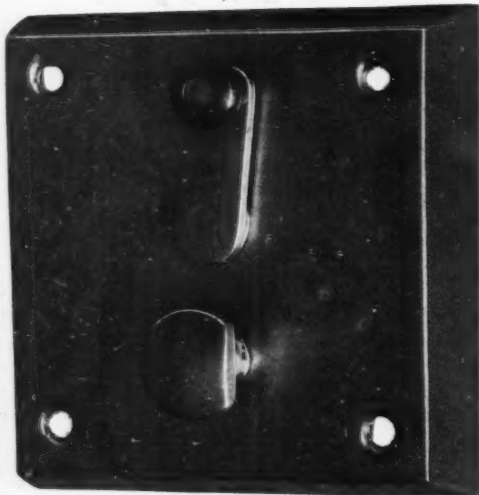
MOLINE AUTOMOBILE CO., East Moline, Ill.

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Buck Auto Carriage Implement Co.,
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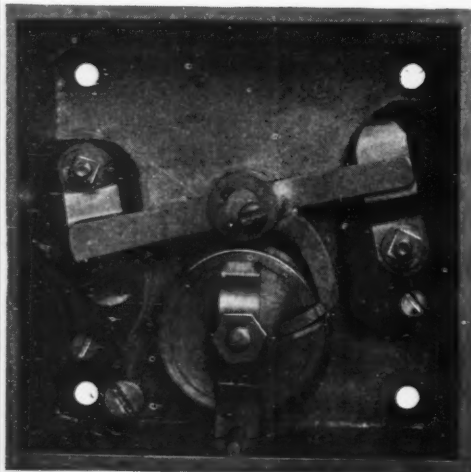
AT LAST



External Appearance of Lock

ACORN COMBINATION AUTOMOBILE LOCK

The Very article that every automobile owner ought to own to protect his car from theft and unauthorized use.



Mechanism Showing Lock in Position

Operates same as combination safe or vault lock.

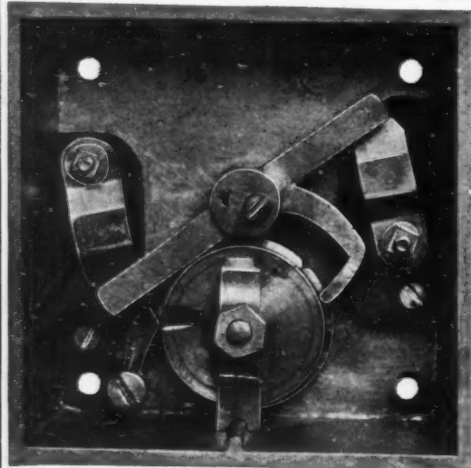
2000 Possible Combinations

NO KEYS

To be Lost or Misplaced

Can be worked in the dark and without removing gloves.

\$5



Mechanism Showing Lock Thrown Out

THE QUESTION

Is \$5.00 cheap enough to insure your car permanently against theft?

THE ANSWER

Your own common sense.

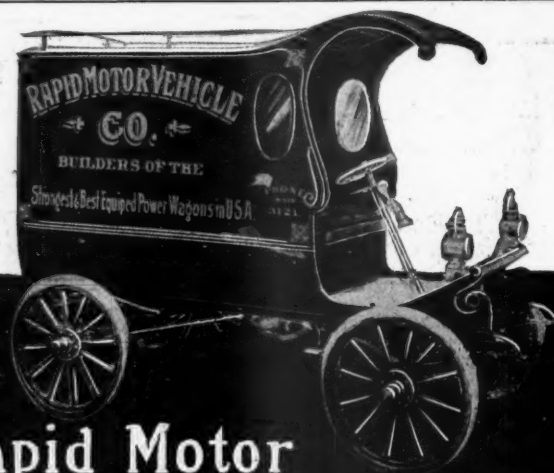
It is impossible, when auto is in garage, for anyone, unauthorized, to operate your car, or move it one foot, if it is equipped with this Lock.

INDESTRUCTIBLE AND GUARANTEED FOR LIFE.

SEND OR CALL FOR ILLUSTRATED CIRCULARS

ACORN BRASS CO.
51 Peoria Street, CHICAGO, ILLINOIS

A good thing for dealers, TOO. Write.



Rapid Motor Vehicle Co. Detroit

A LIVE PROPOSITION FOR GOOD AGENTS

A light, strong Delivery Wagon of great carrying capacity, driven by our unexcelled double-opposed motor, ample power rating, sufficient to draw any weight with which it can be loaded, easily and rapidly. Wheels equipped with solid tires. No packing in engine.

Most Delivery Cars which are offered are merely a side issue with their makers, and consist of a flimsy body on a regular touring car chassis.

WE MAKE NOTHING BUT DELIVERY CARS

but we make them better, stronger and more practical than any other car on the market. Up-to-date merchants want our car; you ought to be prepared to sell it.

There is still some unassigned territory for good agents. Write to-day for information.

RAPID MOTOR VEHICLE CO.
306 Woodward Avenue, DETROIT, MICH.

Half-Tones Etchings Original Photographs

AND

Drawings

PUBLISHED FROM TIME
TO TIME IN

MOTOR AGE

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FOR SALE

Price for Half-Tones and Etchings, uniformly 10c per square inch, with a \$1.00 minimum charge. Price for Photos and Drawings on application : : :

MOTOR AGE
1303 Michigan Av., Chicago

24 H. P., \$5,000
40 H. P., \$6,000

"Matheson"

SEND FOR
CATALOGUE



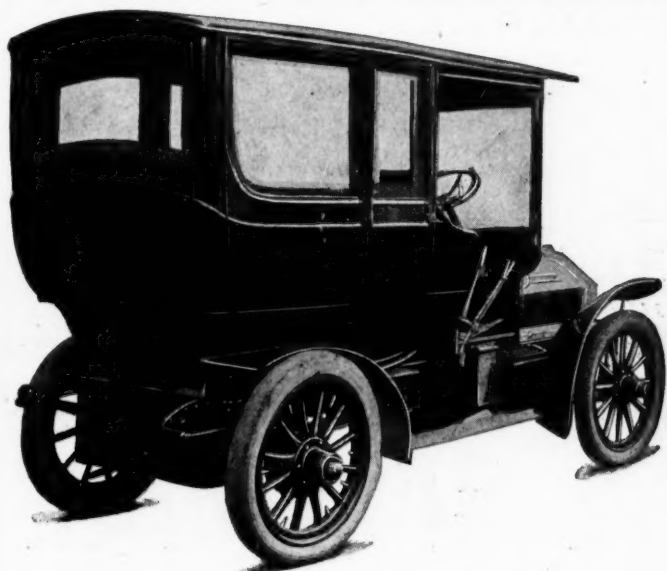
"AMERICA'S FINEST MOTOR CAR"

CHARACTERISTIC FEATURES:

Self-starting from the seat.
Practically noiseless.
Absence of vibration.
Four-cylinder vertical engine.
Valves, in the head.
Automatic carburetor, never requires adjustment.
Automatic speed control, by governor.
Automatic lubrication.
Single lever control.
"Make-and-Break" ignition.
Irreversible steering gear.
Four powerful brakes.
Timken roller bearings.
Armored frame.
Road clearance of 12 inches.
Side entrance.
Aluminum body.
Wheel base 108 inches.
Imported "Continental" tires.
Imported Honeycomb radiator.
Long life—insured by using greater factors of safety in every vital part than ordinarily employed.
Speed—Guaranteed 40 to 60 miles an hour, according to H. P. gear.

MATHESON MOTOR CAR CO., Holyoke, Mass.
New York Agents, SHEPARD BROS., 500 Fifth Ave.

COUPE LIMOUSINE



Capacity, five inside, and plenty of room at that. Finish and workmanship GUARANTEED equal to Brewster's best.

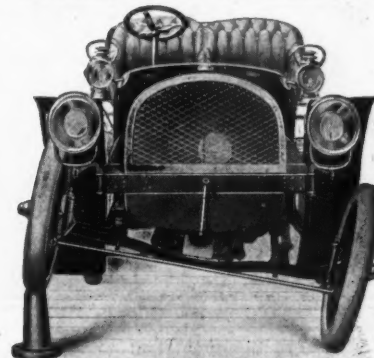
Let us tell you all about it in a personal letter—WRITE

The Chisholm - Philips Automobilium Co.,
1322-1324 Euclid Avenue, :: :: Cleveland, Ohio

EXCLUSIVE AMERICAN AGENTS FOR THE SIMMS-BOSCH MAGNETO. USED ON 90 PER CENT OF ALL EUROPEAN CARS

THE MARMON

...A Mechanical Masterpiece...



THE ONLY CAR whose perfect flexibility can be demonstrated as it is in this picture, because it is the only car embodying

DOUBLE THREE-POINT SUSPENSION

Cast Aluminum Body and simple accessible oil-tight mechanism on separate frames, EACH suspended on three points. Eliminates all the binding strains inevitable in the customary rigid four-point suspension. Means fewer parts, longer life, and greater efficiency. The gentle sway of the Marmon body over the roughest roads is unknown in *any other car*.

Perfectly rigid shaft drive, without Cardan joints; quiet, unique air-cooled motor; positive automatic force lubrication that absolutely marks the end of oil troubles. Booklet No. 1 describes it.

NORDYKE & MARMON COMPANY
Established 1851 Indianapolis, Indiana

Have you seen the new KOKOMO Mechanically-Attached Automobile Tire?



*It is just what you
have been looking for*

Quickly attached and detached.
Creeping and Rim Cutting entirely avoided.
Made of the very best material and workmanship throughout.
Write us for full particulars.

Kokomo Rubber Co., Kokomo, Ind.



Packard

ENAMELED IGNITION CABLES



ARE

REMARKABLE TROUBLE-SAVERS

Thoroughly and permanently protected by *woven* thread coverings, saturated with flexible enamel films, set by high heat.

Unaffected by heat, grease, oil or water.

Send for Booklet "G"

THE PACKARD ELECTRIC COMPANY

WARREN, OHIO

The Auto Cle



This is the wrench that saves you all kinds of trouble—a complete set of wrenches in *a single tool*.

The Auto Cle is a ratchet wrench with a swivel attachment, works at any angle. Has a complete set of sockets fitting any nut or bolt on any machine.

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We are the sole manufacturers for the United States

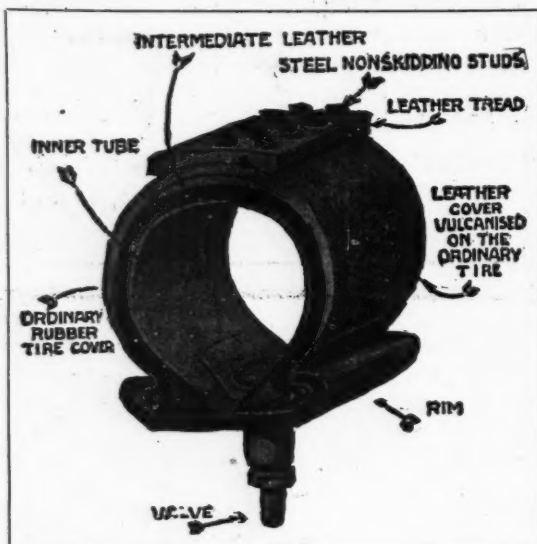
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1175 Old Colony Building

CHICAGO

SAMSON LEATHER TIRE

NON-SKIDDING :: :: PUNCTURE PROOF



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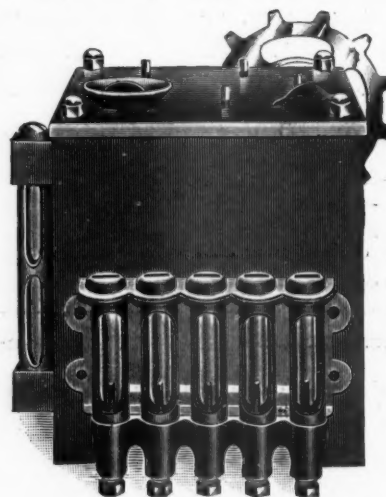
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12 W. 55d Street

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A. E. GALLIEN, Manager

THE HILL PRECISION OILER

Insures your car against dry bearings



It measures the oil and uniformly feeds exact quantities to each bearing it serves, regardless of the resistance, or of the varying resistances, in the different tubes. It feeds only when the machine is in motion.

THE STEEL BALL COMPANY

832 Austin Avenue
CHICAGO, U. S. A.

DURO SENSE

Number 4

Battery Construction

There is a lot of difference in what is inside that case.

The DURO battery is *honest* from the bottom to top and through and through.

Do anything you want with it and you cannot find one thing cheap in its construction.

Get posted. Write for our booklet.

Yet it IS absolutely guaranteed.

And the DURO guarantee means *guarantee*.

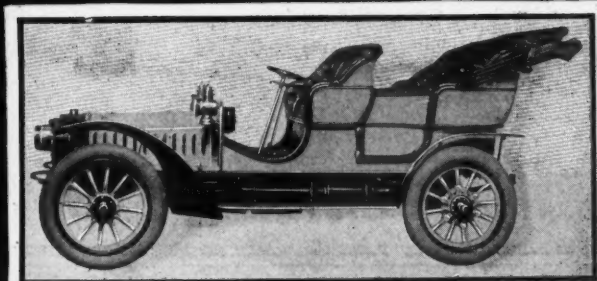
"Duro Factory"

CHICAGO BATTERY CO.

1426 Michigan Avenue
CHICAGO

AUSTIN

A LUXURIOUS CAR



THAT LOOKS THE PART.

2,400 Lbs.
50 H. P.

\$3,500

Same car with 35
h. p. engine.
\$3,900.

Few Parts

108-inch Wheel Base

36-inch Wheels

4 1/2-inch Tires

44 1/2-inch Tonneau Seat Cushion

AUSTIN AUTOMOBILE CO.

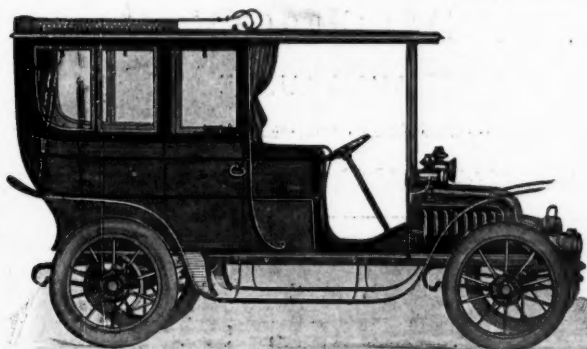
GRAND RAPIDS, MICH.

Correspondence Solicited

Send for Descriptive Catalogue

KIMBALL

**FINEST QUALITY—SPECIAL DESIGN
BODIES AND TOPS**



PURCHASE THE CHASSIS Then let us make a Special Body to suit your individual taste.
Inquiry solicited for Bodies and Tops of all kinds for any make of machine.

Bodies on old machines Altered, Changed and Made Over to suit.

All kinds of Repairing and Repainting.

We have clean, dry Storage Rooms where cars are not interfered with or handled when in storage. **PRICES REASONABLE.**

C. P. KIMBALL & CO., 315 Michigan Ave., Chicago



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of the Automobile Tire business and can recover, repair and rebuild your Continental, Michelin, or American tires, and make them as good as new. I will apply wrapped smooth or rough treads of rubber, either open, steam cured, or vapor cured, on by my secret processes.

I am the originator, inventor and owner in the United States and Canada of non-skidding devices for Automobile Tires.

The Non-Skidding Covers which I apply to old or new tires are made right here in the United States in my factory, and sold all over the world. They are far superior to any foreign make, as they are made from a superior grade of leather, from specially selected hides, steel hardened rivets, and leather and asbestos strips to overcome heat from friction at high speed.

My PEBBLE and ALLIGATOR NON-SKID RUBBER COVERS are the fastest covers in the world to-day.

The patented "HERCULES" LEATHER NON-SKID COVER can be applied to solid, cushion or pneumatic tires of any make or size.

Leather bead strips and leather linings for your tires will save you dollars.

A GOLDEN OPPORTUNITY FOR SMALL INVESTORS

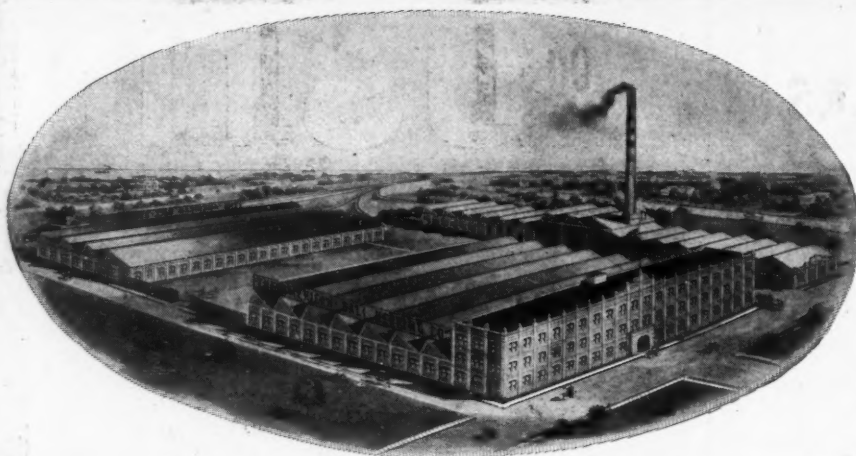
I am installing plants for the proper repairing and rebuilding of Automobile Tires and for the application of "HERCULES" Leather NON-SKID COVERS in every large city in the United States and Canada.

On an investment of \$2000 (two thousand dollars), which covers the complete installation of such a plant with full instructions for the application of all covers by my secret processes, I can guarantee returns of \$15,000 to \$20,000 annually. But one plant will be installed in each city. Chicago and Milwaukee already sold.

Write today for my proposition.

My booklet price list is FREE TO YOU, and I have a FEW Auto Show Souvenirs for polite inquirers.—FREDERICK E. McEWEN, MGR.

The Republic Rubber Tire and Shoe Co.
138 WEST 52d ST. NEW YORK



The output of COMPLETE FRONT and REAR AUTOMOBILE AXLES of this plant exceeds the capacity of all competition combined.

THE AMERICAN BALL BEARING CO.
L. S. & M. S. Railway and Edgewater Park
CLEVELAND, OHIO, U. S. A.

When anything of an urgent nature arises we work nights and Sundays, if need be, to get the work out quickly.

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Pattern making from blue prints of special parts, a feature with us. Time saved means money saved.

Auto Brass and Aluminum Co.
Kearsley and Mill Streets FLINT, MICH.

PRESSED STEEL FRAMES AND UP-TO-DATE PARTS

IT has been our good fortune to secure the three most highly prized assembled frame orders of the season. Our experience in frame manufacture evidently counted largely with these concerns. They didn't consider cost so much as quality and work methods. Besides, they know that ours is the only factory in the country which is equipped for testing complete assembled frames.

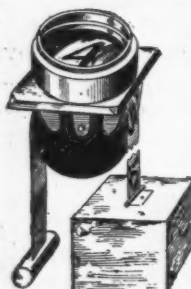
Before you buy frames write for Circulars Nos. 6 and 9. They describe our standard frames for heavy and light cars, all the members for which are shown separately.

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A. O. SMITH COMPANY
MILWAUKEE

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The DEPTH of GASOLINE is constantly shown in large figures, representing inches, under glass cover on the top of the tank.

The FLOAT can be adjusted on the tape to fit any depth of tank up to 18 inches.

The FRAME is made of brass, 2 inches square, and can be soldered on any tank, whether round or square, after cutting a 1 1/4 inch square hole through the top.

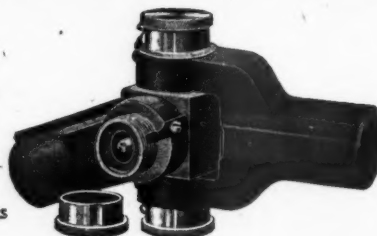
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One filling of
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except what you see above. When you want to take a ride you don't have to stop and dig out the old carbide. Just turn on the gas and light your lamps. We know this sounds too good to be true, but it is a fact with the

PREST-O-LITE GAS TANK

You Avoid all Light Troubles

No cleaning of generators
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Light always ready
Light steady on rough roads
Never wears out
Tips never clog
Economical
No carbide supply to carry

Burn as many lights as desired from
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No waste
Safe; no leaking gas
Nothing to freeze
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The Von Schwarz

None Genuine Without
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Acetylene Burners

SOME ADVANTAGES

They are Recognized Standard Burn-
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Accurate in consumption. Free
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Licensed under Patent 589342,
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THE ST. JOHN SOLID RUBBER CUSHIONED TIRE

The greatest tire man's ingenuity ever produced.
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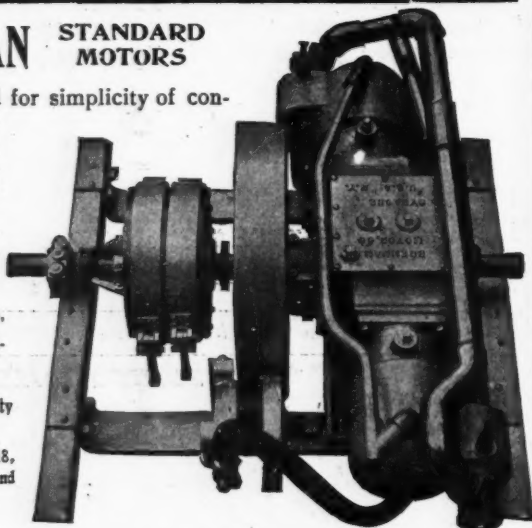
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The Schebler Carbureter

This is the model No. 1 racing Schebler, which was attached to the automobile that broke all world's records for light and middle weight cars and defeated the big 90 h. p. foreign cars, at the Empire City track, Nov. 8th.

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You blow the Horn with the pressure of your foot without removing your hands from the steering wheel or controlling levers, thoroughly overcoming all disadvantages of the old rubber bulb. Is attached to side of car in convenient place to operate with the foot. Made for either right or left side. It is made entirely of polished brass and elegantly finished.

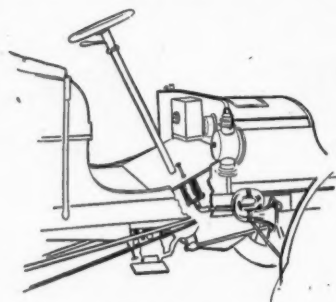


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Showing blower attached to the under side of foot board. It can be placed to operate with either right or left foot as desired. It is not so elegantly finished as style No. 1, as it goes under the car, but is altogether cheaper and quite as efficient. These Blowers will never wear out and always ready for use. Will produce a greater volume of sound than by any other means.

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Capacity 7 tons. Speed 8 miles per hour.

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Special designs submitted to suit requirements

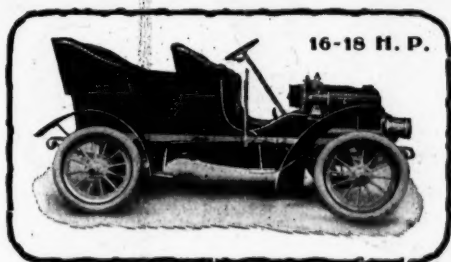
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THE YALE

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THE STODDARD-DAYTON



\$2000 25 H. P. 1800 Pounds

3 Speed and Reverse Sliding Transmission
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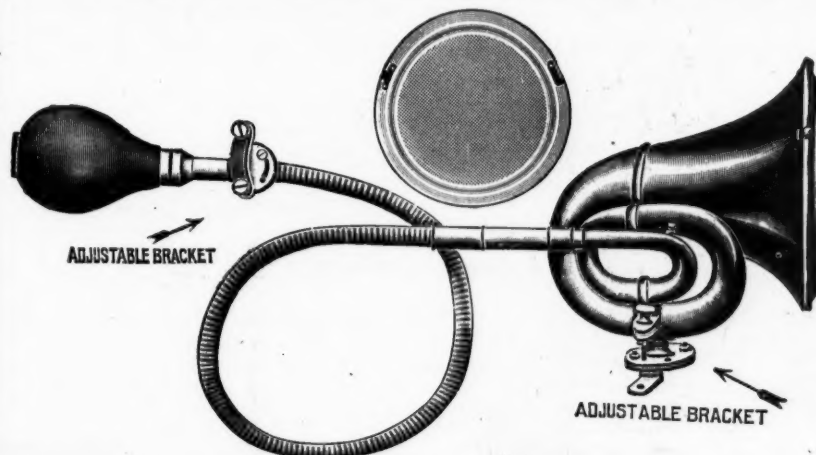
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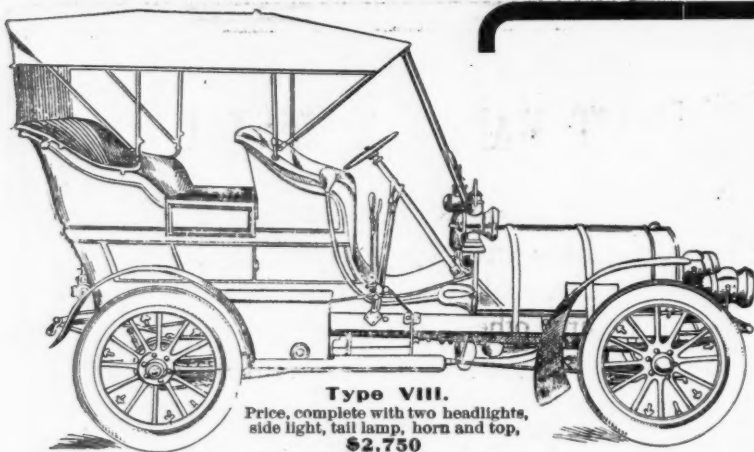
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It was perfection of detail and careful workmanship which made French automobiles famous the world over. History repeats itself, and the same fame for the same reason applies to the 1905

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These are the Lines that make the THOMAS "FLYER"

A Dust Proof Automobile

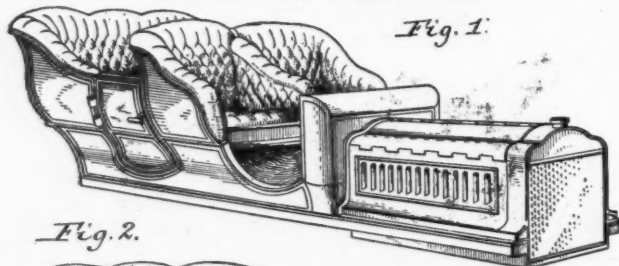
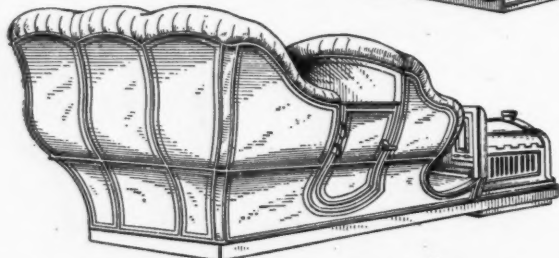


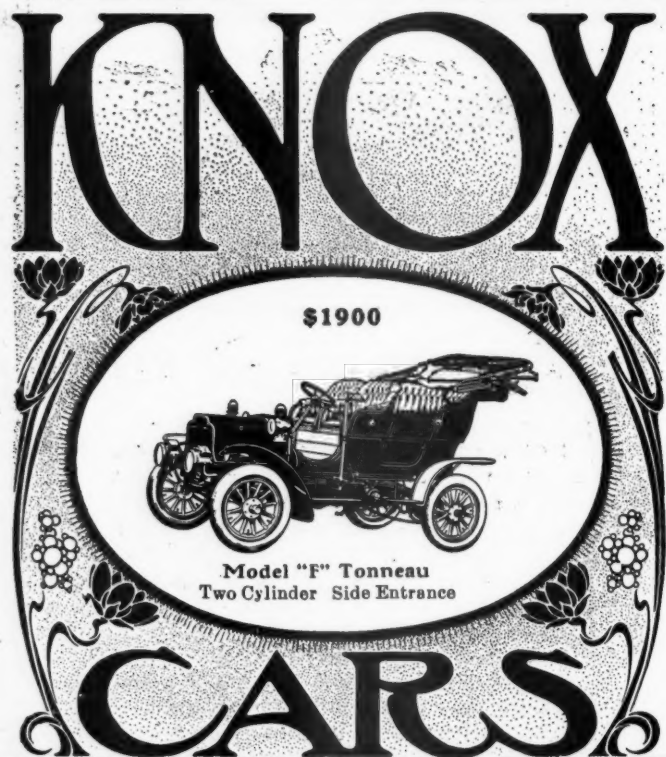
Fig. 1.



A Dustless Tonneau is one of the original and exclusive features of this—America's Most Popular Automobile. Catalogue upon request.

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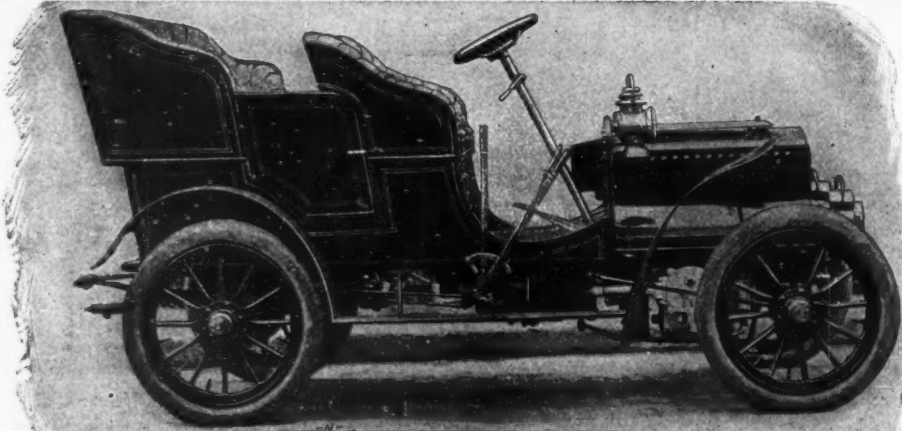
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20 Horse Power

3 Speed Ahead Sliding Gear Transmission

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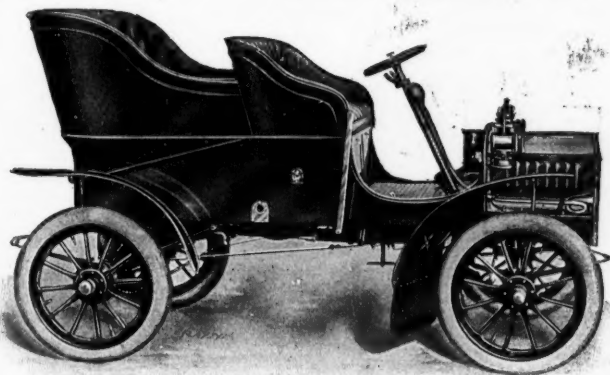
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Carries five persons without crowding. Not an Experiment but a Proved Success.

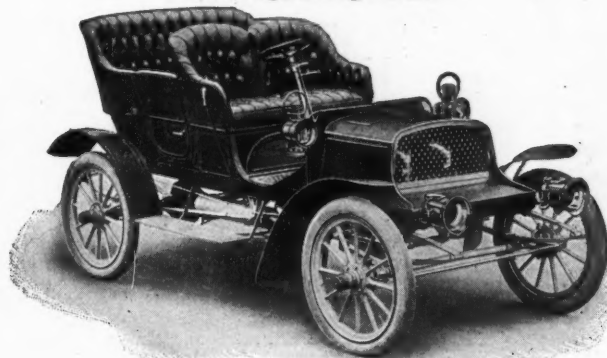
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Simplicity in Construction is Success in Motoring

The Engine a unit in itself
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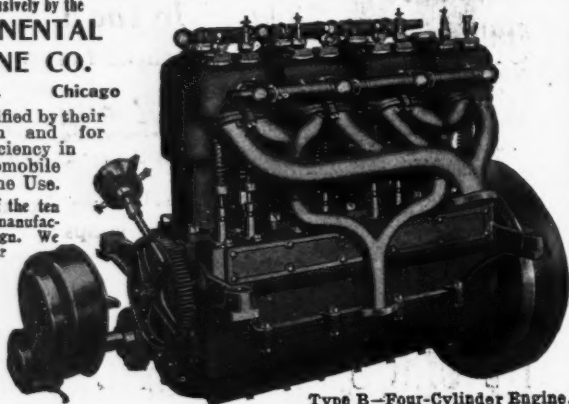
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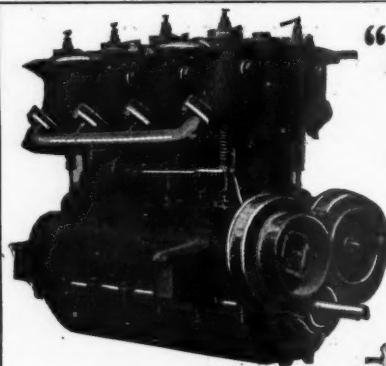
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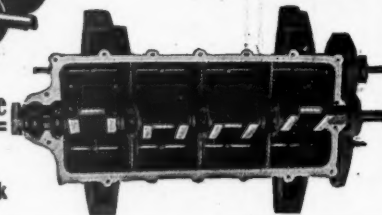
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"Air Cooled."
16 Horse Power.
Beautiful Finish.
Easy Riding.
Reliable.

Keeps cool
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"Seeing is believing."
A trial proves it.

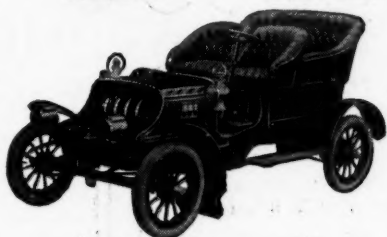
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Blows a full blast from the exhaust with less than
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Its tone is full and clear; it gives as strong a tone as secured with an
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Lens Search-
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Capacity
6 tons.

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OUR NO 2 IS AN AUTOMOBILE SIZE....



This tool is designed for draw-
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Can also be used as a jack. No
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Makes an air-tight invisible coating,
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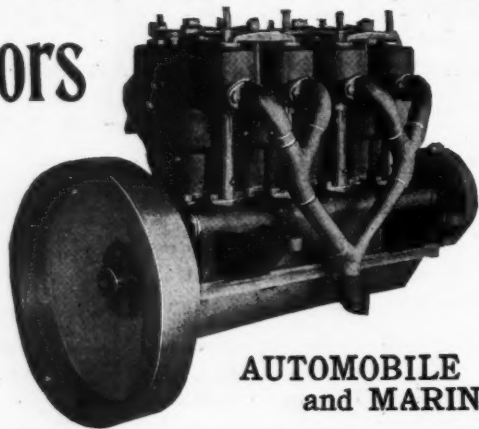
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For \$10.00 you can get the Form B Veeder Odometer which
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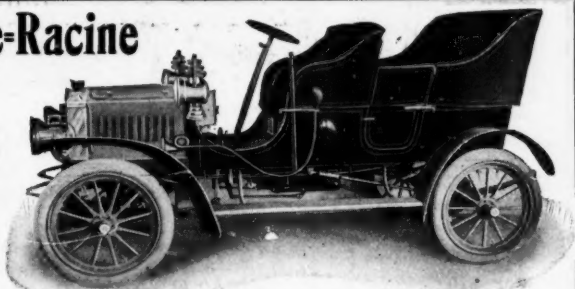


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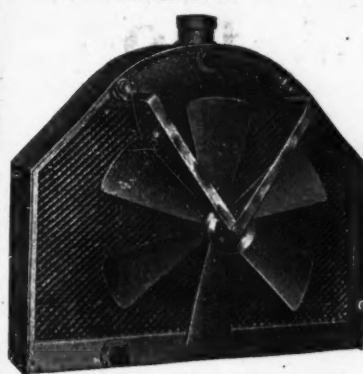
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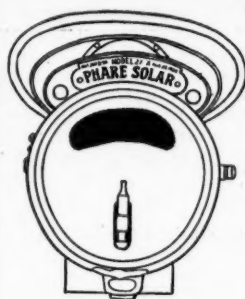
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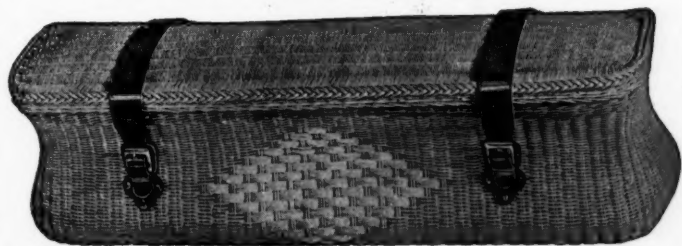
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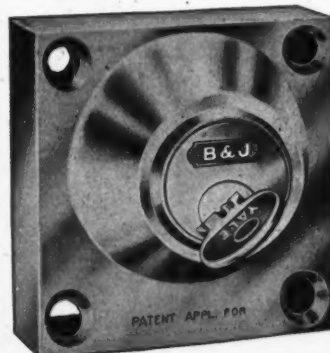
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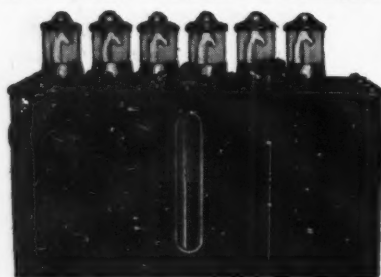
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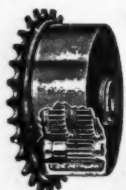
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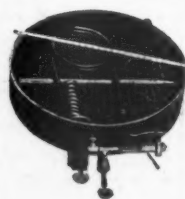
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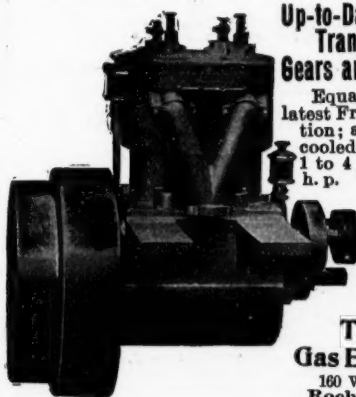
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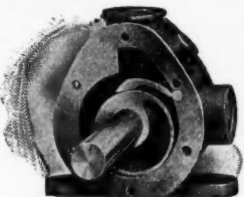
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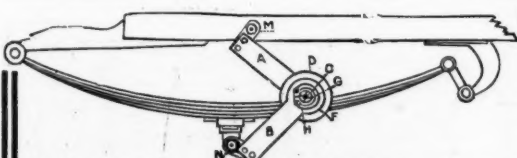
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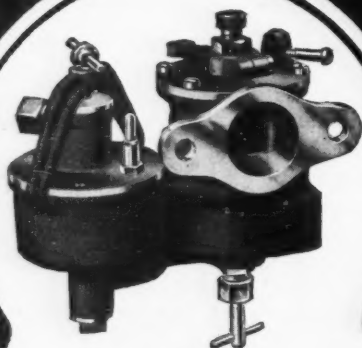
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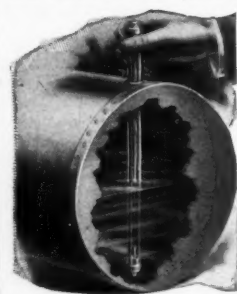
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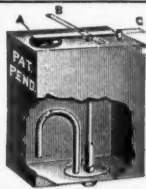
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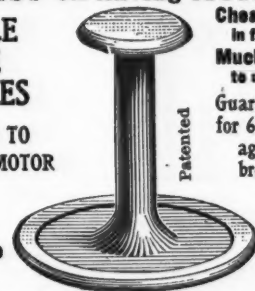
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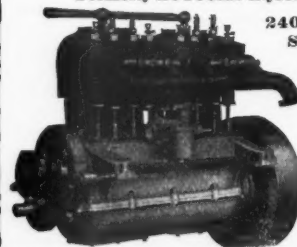
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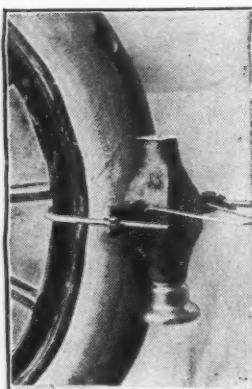
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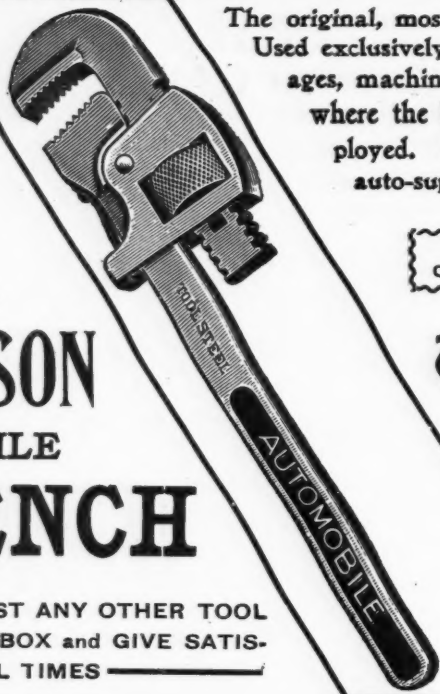
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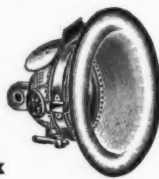
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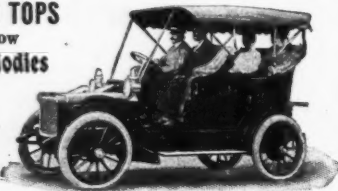
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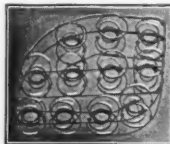
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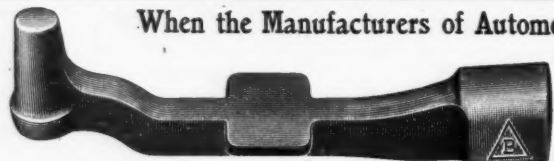
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